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S. HRG. 103–153, PT. 3

Senate Hearings

Before the Committee on Appropriations

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PART 3 (Pages 647–1020)

COUNTERNARCOTICS EFFORT
DEFENSE CONVERSION/INDUSTRIAL BASE
DEPARTMENT OF DEFENSE INFRASTRUCTURE
NONDEPARTMENTAL WITNESSES
OFFICE OF THE SECRETARY OF DEFENSE
SPACE AND COMMAND, CONTROL, COMMUNICATIONS, AND INTELLIGENCE ISSUES

S. HRG. 103–153, PT. 3

DEPARTMENT OF DEFENSE APPROPRIATIONS FOR FISCAL YEAR 1994

HEARINGS

BEFORE A

SUBCOMMITTEE OF THE

COMMITTEE ON APPROPRIATIONS
UNITED STATES SENATE

ONE HUNDRED THIRD CONGRESS

FIRST SESSION

ON

H.R. 3116

AN ACT MAKING APPROPRIATIONS FOR THE DEPARTMENT OF DEFENSE FOR THE FISCAL YEAR ENDING SEPTEMBER 30, 1994, AND FOR OTHER PURPOSES

PART 3 (Pages 647–1020)

Counternarcotics Effort
Defense Conversion/Industrial Base
Department of Defense Infrastructure
Nondepartmental witnesses
Office of the Secretary of Defense
Space and Command, Control, Communications, and Intelligence Issues

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DEPARTMENT OF DEFENSE APPROPRIATIONS FOR FISCAL YEAR 1994

THURSDAY, MAY 20, 1993

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 10:06 a.m., in room SD–192, Dirksen Senate Office Building, Hon. Daniel K. Inouye (chairman) presiding.

Present: Senators Inouye, Stevens, D'Amato, and Domenici.

DEPARTMENT OF DEFENSE

DEPARTMENT OF DEFENSE INFRASTRUCTURE

STATEMENT OF DR. WILLIAM J. PERRY, DEPUTY SECRETARY OF DEFENSE

ACCOMPANIED BY DAVID J. BERTEAU, PRINCIPAL DEPUTY ASSISTANT SECRETARY OF DEFENSE FOR PRODUCTION AND LOGISTICS

OPENING STATEMENT OF SENATOR INOUYE

Senator INOUYE. The topic of our hearing this morning is the Department of Defense's infrastructure. We are pleased to have the Deputy Secretary of Defense, Dr. William Perry, with us, and also Mr. Berteau.

We are all now aware of the changes underway in our military force structure. For 1995, the Army will have 12 active divisions, down from 18 in 1986. The Navy is reducing to 413 ships from a peak of 556 and is now considering options to go as low as 320 ships. The Air Force will have 13 active fighter wings in 1994, down from 24 in 1985.

Many of these reductions are in response to a 40-percent decline in the Pentagon's budget since 1985. To man and support this force structure in 1994, DOD will employ over 1.6 million active duty personnel and 900,000 civilians.

DOD will operate 569 military installations with a fiscal year 1993 base operating support cost of over $24.5 billion. Each service will also operate its own network of labs and test ranges, spending over $10 billion annually.

I make these statements to illustrate two points. First, while undergoing reductions, the Department of Defense must continue to operate, maintain, and modernize the force structure necessary to preserve our Nation's security interests. An expansive network of facilities and personnel is necessary to sustain the readiness of our forces.

Second, the Pentagon's extensive infrastructure is consuming an increasing share of DOD's declining budget resources. This second point dictates that the Department must reduce its infrastructure. Indeed, the Pentagon must ensure that it maintains only the necessary level of infrastructure.

We must avoid spending scarce resources on the operation and maintenance of excess facilities. However, these decisions must be made carefully and it may be impossible to regain unique capabilities and facilities once they are lost.

In his report on roles, missions, and functions, the Chairman of the Joint Chiefs of Staff made a number of recommendations which sought to consolidate and streamline DOD operations and reduce infrastructure. Through interservice reliance efforts, the Pentagon is trying to coordinate and consolidate research development, test, and evaluation activities. In addition, each of the services has completed a major restructuring of its R&D facilities.

Finally, as we meet, no less than seven task forces are reviewing various components of infrastructure as part of the ongoing bottom-up review. In our discussions this morning, I hope we will get a better sense of the Department's objectives in these various reviews.

It is not the committee's intention to discuss the ongoing base closure and realignment process. Rather, the committee seeks to take a closer look at the options currently under consideration which will determine DOD's future infrastructure.

Mr. Secretary, we look forward to discussing your views on these and other challenging and difficult issues during the hearing this morning. We have received your statement, and it will be made part of the record.

Before we proceed, I would like to convey to you the regrets of my vice chairman, Senator Stevens. We just concluded a very important meeting of the Rules Committee and he has to stay back and face the press, and some of us got away from that.

Dr. Perry, please proceed, sir.

STATEMENT OVERVIEW

Dr. PERRY. Thank you, Mr. Chairman. With your permission, I will not read my opening statement, since it will be part of the record. I will simply, as my oral statement, pick a few highlights from it that I think are worthy of emphasis.

NEW PHILOSOPHY

The Department of Defense today is seeking to apply a new philosophy to America's defense posture to meet the new and different security dangers we face in the post-cold war era. We are still in the process of developing these new plans, and so I will report to you today on work in progress.

I know there are many important questions you have in mind which I will not be able to answer definitively today, but I will be happy to give you a status report on what we are doing.

You already have, of course, the fiscal year 1994 budget; and while we had a relatively short time to prepare changes to the budget which had been prepared by the Bush administration, we do see that budget as representing the first step toward America's first truly post-cold war defense program.

BOTTOM-UP REVIEW

The second and more important step is the bottom-up review to which you referred. That is in process now. We expect that to be concluded by midsummer and the results will be fully reflected in the fiscal year 1995 budget and the Future Years Defense Program [FYDP], which will be submitted to Congress.

The main objective of this bottom-up review is developing guidelines for reducing and restructuring the U.S. defense posture in the context of a revised U.S. military strategy. This bottom-up review will demonstrate the relationship between defense budgets and the ability of forces they fund to cope with these new security dangers.

In March, as you know, the Secretary directed a number of changes in the assignment of the service roles and missions. These changes were based on recommendations made in the Chairman of the Joint Chiefs of Staff roles and missions report.

The Secretary, on the one hand, directed an implementation of changes and on the other hand requested a series of fast track studies. Some of the changes involved designating a single commander for readiness, for training of Conus-based forces, and consolidating fixed-wing aircraft training. Some of the fast track studies involved the consideration of Air Force as the primary agent for the design, launch, and operation of satellites, and a study to reduce excess depot capacity and to assess the merits of consolidating depot management functions.

ODEEN PANEL REPORT

Earlier this week, the Secretary released a Defense Science Board task force report which has come to be known as the Odeen Panel report. This panel was asked to determine the validity of assumptions in a number of areas in the Bush administration's defense budget.

We were concerned that this budget, which we started off with, may have understated some of the costs for the programs in that budget, and we asked the panel to, essentially, do an audit task to determine how much the shortfall was. They have completed their analysis and they have concluded that there are shortfalls of about $12 to $15 billion in that budget for which we need to accommodate.

That is, if we executed the programs in those budgets, they would cost us $12 to $15 billion more than had been estimated. That breaks out to $9 to $11 billion for unrealized management savings under the so-called DMR, $2 to $3 billion for underestimated weapons systems costs, and $1 to $1.5 billion for underestimated environmental cleanup and compliance costs.

We anticipated some of this shortfall when we put the defense budget together for fiscal year 1994 and for fiscal years 1994 to 1997, and so we had anticipated a shortfall of $10 billion. We were, therefore, $2 to $5 billion off in that estimate, and as a consequence the Clinton administration has agreed that they will add the necessary amounts to the projected budgets so that we will not have to take that extra shortfall out of programs or out of O&M.

READINESS

That gets me to the very important question of readiness. Both the Secretary and I are totally committed to maintaining the high level of readiness that made it possible for the Department of Defense to perform so successfully in Operation Desert Storm, Operation Restore Hope, and other recent military operations.

There are several very real threats to following through on those recommendations. One of them is we are having substantial difficulty in making the cash transfers required under the so-called DBOF program. DBOF is an acronym for the defense business operations fund. This shortfall is a result of unplanned contingencies. Somalia alone cost us more than $700 million, and several other factors add to that shortfall such as the flood repair damage at Camp Pendleton.

We are taking several actions to deal with this. First, we have requested that the Congress reprogram $750 million from our 1993 investment program into the operating accounts to finance the cost of the Somalia operation, and we are preparing and will have available to the Congress very shortly a second reprogramming request to finance other requirements.

Second, I have directed the Comptroller to transfer the next increment of available cash to meet the operating requirements of the service.

DEFENSE BUSINESS OPERATIONS FUND

Third, we have instituted a detailed review of this DBOF program, this defense business operations fund. We have assembled an expert financial team made up of service, Defense Agency, OSD, and outside experts to review this whole process and to make recommendations for changes, major changes if necessary, so that we can get the financial management of the operation account onto a businesslike basis.

In line with that, we have requested full support from the services, because we believe that it will require the services and the Comptroller working together to really bring this problem under control.

MOBILIZATION AND INDUSTRIAL BASE

Another issue is the mobilization and industrial base. Now, as you know, it is a long-term policy of the Defense Department to place the maximum reliance possible on the private sector to supply our requirements. We make exceptions to that in a number of cases where we have Government-owned, contractor-operated [GOCO] facilities, or Government-owned, Government-operated [GOGO] facilities. Historically, U.S. manufacturers and private industry have designed and built the weapons systems which we use, and Government depots and shipyards have managed the repair and overhaul of those systems.

That has been the operating mode of the past. As we now look, however, at the very substantial downturn in the defense budget and in the resources we will have for the production of weapons systems, we see that this defense industrial base is going to be reduced substantially, probably by more than a factor of two, and in some cases as much as a factor of three.

That is to say, the base 5 years from now may be down to one-third of what it was 5 years ago. How to manage that downturn adequately is going to be one of the most important management issues we confront.

Specific issues include the relative balance between the private sector and the public sector in this industrial base, what we do in Government laboratories and depots, and what we do in private industry. These issues are going to be the most significant and difficult issues that we face.

A closely related question is how we maintain a minimum essential production capability for defense-unique systems such as nuclear submarines and fighter aircraft. A major part of the bottom-up review is not just looking at the question of which programs are going to be included in our future budgets, but also looking at the question of how we maintain the industrial base necessary to do these programs. That part of the review is well advanced and we are already starting to get some conclusions from it.

One of the specific conclusions is the importance of dual-use technology and the importance of acquisition reform in maintaining this industrial base. It is a difficult and complex issue which I do not plan to get into today.

Let me simply say that there are two related aspects. The first is that wherever possible we should be buying our equipment from the national industrial base, not from a narrow defense industrial base. What that means is that in the components and subsystems that go into our defense equipment, we should be able to buy them commercially.

In order for that to happen, we will have to change our requirements for military specifications, and we will have to change our acquisition—the way we acquire equipment—and that is going to be one component of our acquisition reform.

INDUSTRIAL BASE STUDY

The second related aspect has to do with those items that cannot be bought on the commercial base that are absolutely unique to defense, and those are typically the larger systems. The examples I have already mentioned are the nuclear submarines and fighter aircraft, and in those our defense industrial policy must find a way of maintaining a minimum essential production capacity in those areas.

We are looking at several different alternatives to that, one of which is maintaining low rate production at those facilities so that we do not lose the capacity to build some vital components of our defense capability.

Senator STEVENS. Could I interrupt you there, Dr. Perry? When will we get that? Some of us were talking about that the other day. When do we get that study that shows what the relative cost will be to stretch out some production to maintain industrial base into the next century?

Dr. PERRY. In the next 3 or 4 weeks, Senator Stevens. That study is almost completed.

Senator STEVENS. All right; thank you.

Dr. PERRY. Another part of this industrial base study is the laboratories, the Government laboratories, research laboratories that we have, and the facilities for test and evaluation. Already underway are a series of programs that involve much greater coordination and cooperation among the services in those laboratories—that is called the Reliance Program—and greater joint service use of test and evaluation facilities. The result of that will be allowing us to reduce the number of laboratories and the cost of maintaining those laboratories. That also is a major consideration in a bottom-up review, and we expect to have major new proposals dealing with those problems in the relatively near future.

One special and particularly difficult problem is the depot maintenance installations. The problem here is twofold. First of all, the workload is going down for those depot maintenance facilities; and, therefore, there is a move to consolidate and reduce them for that reason alone. Second, the depots find themselves in competition with private industry for the maintenance work.

It has been proposed, and we are giving it serious consideration, that we increase use of industry for the maintenance of equipment in the field. The rationale for that is that it is one of the ways of maintaining the defense industrial base by having the company that originally manufactured the equipment go on to provide the maintenance and refit of that equipment as time goes on.

The difficulty implementing that is that this requires us to devise a way of allowing Government maintenance depots and private industry to compete, and there is a substantial difficulty in laying out the rules by which such a competition can be fairly done. That is an ongoing issue and one which is a part of the depot study we are now conducting. So we will have something new to report to you on that before the summer is over.

BASE CLOSURES

Finally, I wanted to comment on the base closure process that is going on, both overseas and in the United States. We are cutting back our overseas presence at very substantial rates. We are going from over 300,000 forces in Germany to about 100,000; we have made smaller but still significant reductions in both Japan and Korea; and we have further reductions planned for Japan. Further reductions are also planned for Korea, but those are now on hold because of the emerging threat from North Korea's nuclear weapon program.

All of these changes have resulted in a faster rate of closing overseas bases than of domestic bases. Out of a total of more than 1,600 overseas sites we have already announced the return or partial return of more than 700. So there is a very substantial reduction of overseas bases going on.

As you know, we recommended in the 1993 BRAC a closure of 31 major domestic bases, realignment of 12 others, and reduction of 122 smaller bases. Those are, of course, now being considered by the Defense Base Closure and Realignment Commission. I do want to report to you, though, that those closures and realignments were based on the so-called base force of the Bush program, and we see that force being reduced substantially in the years to come.

The major consequence of that, then, is that we will have further reductions of bases to propose for the 1995 BRAC. I cannot give you the exact number on that, but we have already started looking at the further base closures that will be required. It is evident that if we are going to make further reductions in personnel and force structure, then we will not need as extensive a base infrastructure to go with that.

This summarizes a number of specific points and highlights from my formal statement. I think, with that, I will close my oral statement and open to questions at this point, Mr. Chairman.

[The statement follows:]

STATEMENT OF DR. WILLIAM J. PERRY

Mr. Chairman and distinguished members of the Subcommittee, it is a pleasure to appear before you today to discuss the Department of Defense's infrastructure and our plans for making the changes necessary to adjust to lower defense budgets.

FOUNDATIONS OF THE FISCAL YEAR 1994 BUDGET REQUEST

Defense infrastructure issues should be considered in the context of President Clinton's fiscal year 1994 defense budget and its foundation of assumptions and assessments. The request is the first step in applying a new perspective on America's most pressing security dangers and how best to counter them. It accelerates force structure reductions; and it assumes that when our end strength and force reductions are complete, they will be lower than projected under the Bush Administration. The request preserves the high readiness and quality of U.S. forces, including the combat superiority of our weapons. It provides selective modernization for key weapons, contributes to protecting the U.S. defense industrial base, and protects development of future generation combat systems. The request emphasizes vigorous, but carefully targeted research and development, including the pursuit of promising dual-use technologies.

To achieve these building blocks of U.S. security, we must reduce our defense infrastructure at least as much as our budget and force levels. Otherwise, resources will go to redundant support rather than needed military muscle and measures to counter emerging security dangers.

CLINTON DEFENSE PLAN: NEW STRATEGY AND NEW FORCES FOR A NEW ERA

What the Department of Defense is seeking to do is to apply a new philosophy to America's defense posture based on a reassessment of the security dangers we face and on sound strategies for meeting them. We have been working on this new perspective for many months, and now have begun implementing it. So today I report to you on "work in progress."

The first step in applying our perspective is the administration's fiscal year 1994 defense budget. While clearly there were limits on how much we could do in the weeks since coming into office, the President's budget begins to implement our ideas, and in that sense is, a first step toward America's first truly post-Cold War defense program.

The second step in applying our new defense perspective is our Bottom-up Review of defense needs and programs, to be completed by late summer. It will yield detailed guidance for reshaping America's defense posture. It will culminate next February in the fiscal year 1995 Department of Defense (DOD) budget and fiscal year 1995–99 Future Years Defense Program (FYDP).

BOTTOM-UP REVIEW

As Secretary Aspin testified during his confirmation hearing, reducing the force size while maintaining its quality and effectiveness is the primary objective during the next four years.

The Department has begun a Bottom-up Review of defense needs and programs for fiscal years 1995–99 to address issues of regional security, the proliferation of weapons of mass destruction, and the requirements for democratic, environmental and economic security. The main objective of the Bottom-up Review is to develop guidelines for reducing and restructuring the U.S. defense posture in the context of a revised U.S. military strategy. The products from the Bottom-up Review will be designed to demonstrate the relationship between defense budgets and the ability of forces they fund to cope with the new security dangers we face. The goal is to establish a sound basis for (1) the transition to an eventual steady state for the defense budget, (2) a revised U.S. military strategy, (3) the overall force structure, and (4) selected defense programs.

CJCS ROLES AND MISSIONS REPORT

In late March, Secretary Aspin directed a number of changes in the assignment of Service roles and missions based on recommendations in the Chairman's Roles and Mission report. The Secretary also outlined his thinking about further changes in the assignment of Service responsibilities, noting particularly that there remains a strong rationale for maintaining combat diversity among the Services, but emphasizing strongly that, where possible, the Services will adopt common approaches when fielding similar capabilities.

The Secretary directed that implementation of changes proceed quickly in several areas. Important examples include:

—Designating a single commander for readiness and training of CONUS-based forces.

—Consolidating fixed-wing aircraft training; attack helicopter maintenance and aircrew training; and general support helicopter maintenance training, simulator training, and maintenance infrastructure.

—Consolidating airborne command and control operations for strategic nuclear forces in the Navy's E–6A aircraft.

—Assigning close air support as a primary function to all Services, and accounting for the contributions of attack helicopters in close air support operations.

In other areas, the Secretary directed that fast-track studies be prepared to identify more detailed implementation plans or to explore additional alternatives. Important examples include:

—Considering the merger of U.S. Strategic Command and U.S. Space Command and designating the Air Force as the primary agent for design, launch, and operation of satellites.

—Reducing excess depot capacity and assessing the merits of consolidating depot management functions.

Secretary Aspin's overall focus is on preserving the benefits that derive from competition among Services, while eliminating wasteful practices. He is committed to ensuring that where we elect to maintain multi-Service capabilities and where those capabilities involve the use of similar weapons systems or platforms, clear-cut responsibilities are levied on the responsible components to develop and implement standardization, consolidation, and common practices.

ODEEN PANEL REPORT

Earlier this week, Secretary Aspin released the Defense Science Board Task Force Report on the fiscal year 1994–99 Future Years Defense Program. The Task Force which became known as the Odeen panel was asked to determine the validity of assumptions in a number of areas in the Bush Administration defense budget for fiscal year 1994–99 we inherited.

The panel has done a superb job in helping us identify problems that, if left unsolved, could hollow out our forces. We will not let that happen. Secretary Aspin has stated that the defense budget will not have to take additional cuts despite budget shortfalls reported by the Odeen panel.

After its review, the panel found that there would be shortfalls of $12 billion to $15 billion from fiscal years 1994 through 1997. The shortfalls break down this way: $9 billion to $11 billion for unrealized management savings under DMR; $2 billion to $3 billion for underestimated weapons costs; and $1 billion to $1.5 billion for underestimated environmental cleanup and compliance costs.

When the Clinton Administration made its defense budget plans for fiscal years 1994–97, we anticipated making up a shortfall of $10 billion in the Bush Administration program. To avoid forcing the Defense Department to absorb further shortfalls, the Clinton Administration will add $5 billion to the projected defense budgets for fiscal years 1995–1997.

READINESS IN FISCAL YEAR 1993

The Secretary and I are committed to continuing the high level of readiness that made it possible for the Department to respond so successfully in Operation Desert Storm, Operation Restore Hope and other very important recent military operations.

The readiness levels that made success in these operations possible would be threatened in fiscal year 1993 if cash transfers from the Defense Business Operations Fund (DBOF) are not completed and if unplanned contingencies (Somalia, Camp Pendleton flood repair, medical shortfall, e.g.) drain funds from our operating accounts. The Department has taken immediate action on these funding problems to ensure that readiness of our forces is sustained throughout this fiscal year and beyond.

First, DOD has requested that Congress reprogram $750 million from the fiscal year 1993 investment program into the operating accounts to finance the costs of the Somalia operation. We will soon be sending Congress a second reprogramming request to finance other requirements that have emerged in the course of executing the fiscal year 1993 program.

Second, the Comptroller will transfer the next increment of available cash to meet the operating requirements of the Services. The Secretary and I are committed to transfer the full amount of DBOF cash to the Services in fiscal year 1993.

Third, we have instituted a detailed review of our implementation of DBOF. The Comptroller will vigorously pursue improvements in accounting and management of the DBOF and will develop a phased plan to ensure that the DBOF cash will be available to sustain readiness in the operating accounts during the remaining months of this fiscal year. At the same time, we have established an expert financial team, made up of Service, Defense Agency, OSD representatives, and outside experts to review DBOF implementation to date and to make recommendations on changes and improvements required to meet the Department's objectives.

Fourth, we have requested vigorous support from each of the Services in improving the management of the DBOF. The Services and the Comptroller, working together, need to ensure that the important goals of improved cost awareness and businesslike management that prompted the creation of DBOF are achieved.

The Secretary and I are committed to maintaining the readiness of our military forces in spite of these potential problems. I ask you to join me in a commitment to these shared goals. Together we can make sure that the capability of the Department is not damaged or degraded by the financial challenges facing us this fiscal year.

MOBILIZATION AND INDUSTRIAL BASE

It is the policy of the Defense Department to place maximum reliance possible on the private sector to supply our requirements. However, there are specific instances where it is in the Department's best interests to establish and maintain government-owned facilities and equipment or to intervene in the private sector to ensure maintenance of essential capabilities.

Some of the methods include government-owned, contractor-operated facilities; government-owned, government-operated facilities; purchase of equipment for contractor use; layaway of facilities and/or equipment in plant equipment packages (PEPS); and industrial base planning with industry (total of $214M in fiscal year 1994). We also purchase additional supplies we don't have to have ("warstopper" items, total of $157M in fiscal year 1994). Finally, we use procurement restrictions (i.e., exceptions to full and open competition) to maintain essential production capability. In the period 1988–1992, we spent $28.7 billion for such items to maintain production capability. Because these are determined on a case-by-case basis, we cannot predict what the dollar amount will be for fiscal year 1994.

Historically, U.S. manufacturers designed and built weapon systems and military depots and shipyards managed the repair and overhaul of those weapons systems. As the requirement for manufacture of new weapon systems grows smaller with the changing world, manufacturing capacity will be downsized as a matter of economic necessity. The Department is interested in maintaining those development, design and manufacturing capabilities that cannot be easily obtained from the existing commercial base, military depots or laboratories. Clearly, government depots and laboratories play a very important role, but they do not possess the overall capabilities for development and production of entire systems.

A critical part of transitioning through the overall downsizing of our defense force levels as a result of diminishing defense needs is to assure that we fully understand what the long term implications are on that part of the industrial base which provides and maintains these forces. Appropriate actions can be taken to assure essential industrial capabilities are maintained to support future defense requirements.

The Department has developed a process to assess industrial base capabilities in both the public and private sectors, examining the requirement for the product, essential/unique skills, facilities, technologies and processes, potential for technology insertion, existence of alternative sources, and consideration of time, cost, and risk to shutdown and reconstitution.

This process has already been used to evaluate the submarine industrial base, including nuclear capable naval shipyards and depots, and to provide an industrial base assessment to several of the Bottom-up Reviews. These assessments provide visibility into the essential/unique industrial capabilities the Department requires to develop, build, and maintain our forces.

The primary purpose of conducting these industrial base analyses and oversight processes is to ensure that cost effective, responsive and technologically advanced industrial capabilities will be available to produce and support defense and economic security requirements, regardless of the scenarios being considered. When these analyses or studies indicate that some critical capabilities are in jeopardy or will likely be jeopardized at some future period, steps should be taken to correct these situations. These corrective or special actions take on a wide range of options depending on the capability at risk and the options available for each particular issue. Some examples include focused science and technology projects, product improvement initiatives, increased support for Foreign Military Sales, low rate production programs, shifting work between public and private capabilities, or smart shutdown/reconstitution plans.

With respect to DOD maintenance facilities, we expect that during fiscal year 1993 the Department will spend about $13 billion for depot maintenance. Historically, nearly 70 percent of the total DOD depot maintenance workload has been accomplished in DOD facilities, while the balance is performed by over 1,700 private contractors. Of course, many of the dollars spent for work in DOD maintenance facilities end up buying parts and materiel from private contractors as well. Private industry continues to be an essential element of the Department's industrial base, and we are supportive of maintaining a robust commercial maintenance capability.

The government's maintenance depots have played a vital role in the successful support and readiness of our military operating forces during peacetime as well as combat operations. Recognizing that force reductions and restructuring emanating from a diminished world threat would produce a subsequent downturn in depot workload, we have made a commitment to reduce excess maintenance capacity and accelerate infrastructure reductions. I will say more about this later.

DUAL-USE TECHNOLOGY AND ACQUISITION REFORM

In the face of defense industry downsizing, we should explore every opportunity to expand the potential industrial base upon which we draw. We must pursue dual-use technology strategies—and aggressively increase the integration of the civilian and defense-unique industrial bases on which this strategy depends. Pursuing dual-use technologies and commercial-military integration will allow the Department faster and lower-cost access to technologies for many of our advanced weapons. It will also encourage faster and lower-cost manufacturing, create a much larger industrial base to draw upon for reconstitution purposes, and facilitate defense conversion efforts. To achieve this goal will require changes in the way we do business. We must accept commercial standards where appropriate and we must change procurement regulations and cost accounting procedures to conform to accepted business practices.

ONGOING INITIATIVES AND STUDIES

Now I'd like to review some of the initiatives and studies we have ongoing to improve management of the Defense Department and to extract the maximum capability from scarce defense resources.

STRATEGIC MOBILITY

The fiscal year 1993 Defense Appropriations Act included $70 million to enhance the mobility of forces deploying from CONUS. This was an initiative of the Senate Appropriations Committee. The Committee recommended that the funds be used for programs such as refurbishing port facilities and railheads, updating transportation, communications and management tools, and purchasing supplies and equipment to improve cargo handling capabilities.

The recommendations of the military services on specific programs have been reviewed and prioritized, and $36 million of the funds appropriated were allocated to: (1) improve DOD visibility over materiel and units in transit from the CONUS to an overseas theater, (2) enhance the Marine Corps family of deployment systems, (3) expand the Navy shipboard logistics system, (4) maintain and repair sealift support equipment, and (5) procure airlift pallets and nets. The remaining $34 million was transferred, as provided in Section 9162 of the DOD fiscal year 1993 Appropriations Act, to the DOD Office of Economic Adjustment for a grant to the American Red Cross for reimbursement for disaster relief expenditures for Guam, American Samoa, and Puerto Rico.

The Army has allocated additional funding of $39.8 million in fiscal year 1994 for railhead design and infrastructure improvements at key mobilization and deployment installations. Additional railcar purchases are also being programmed for prepositioning at deployment installations that will have the capability of transporting tanks, wheeled vehicles, and ammunition.

As part of the Bottom-up Review, we have an on-going DOD internal Infrastructure Review, which includes a review of the requirement for mobility support infrastructure such as seaports, airports, prepositioned materiel maintenance sites, and facilities for maintenance of sealift reserve ships.

TRI-SERVICE RELIANCE LABORATORIES

In 1991, the Services entered into a set of formal agreements for the joint planning and execution of the non-Service unique elements of their 6.1, 6.2, 6.3A programs. More than 50 percent of the Service $5.0 billion Science and Technology (S&T) fiscal year 1993 funding was planned for execution under this program, called Project Reliance.

The primary goals of Reliance are to promote cooperation and reduce duplication. The program is structured to achieve greater efficiency, maintain our technical leadership for the future, promote faster technology transfer from the laboratories to the private sector, and respond to specific service technology requirements.

As a result of Reliance, the Services have moved from an era where the primary measure of coordination was cooperation, to the current situation in which there are a large number of efforts which are jointly funded or collocated. Even greater progress is anticipated as DOD focuses on improving the quality of the DOD laboratories.

TEST AND EVALUATION

The Test and Evaluation piece of Reliance has established a process by which OSD and the Services agree on a "Lead" Service for investments in new capabilities for the following specific classes of test programs: Land Vehicles, Chemical/Biological Defense, Air Breathing Engines, Surface-to-Air Missiles, Guns and Munitions, Climatic Laboratories, Supersonic Sleds, Test Support Aircraft, Global Positioning System, Time-Space-Position Instrumentation, Common Airborne Instrumentation, Targets, Air-to-Air Missiles, Air-to-Surface Missiles, Nuclear Weapons Effects, Electric Guns, Electronic Warfare, and Fixed Wing Aircraft. At this time, the Service Acquisition Executives have signed and OSD has endorsed Memoranda of Agreement in most of these areas. The follower Services and DOD agencies rely on the lead Service for identification of the required capacity and where new capabilities are to be located. Additionally, a single Service is assigned acquisition responsibilities for common instrumentation, targets, and threat simulators when required by more than one Service or DOD agency. A product of the T&E Reliance strategy, updated every two years, provides a road-map for future consolidations of the test and evaluation infrastructure, reduces unwarranted duplication and capacity, streamlines management, and permits development of "world class" test capabilities at only a few locations.

HEALTH CARE DELIVERY INTEGRATION AND CENTRALIZATION

Since the mid-1980s the Department of Defense has been working toward consolidation of health care delivery activities. We have undertaken several health care resource integration demonstrations in joint command and catchment area management activities in the Delaware Valley, San Francisco Bay Area, San Antonio, Texas and Charleston, South Carolina where facilities that provide multiservice care are jointly staffed and provide other integrated support.

In 1991, in a further move toward more central management, an internal study to determine the optimum organization of medical functions within the Department of Defense resulted in the assignment of health care program management and budgetary responsibility to the Assistant Secretary of Defense (Health Affairs). This included the creation of a separate Defense Health Program in the budget. Additionally, a managed care program for the Department, under the direction of the Assistant Secretary of Defense (Health Affairs), was approved. The program features optimal use of Military Health Services System resources and includes the assignment of lead agents. Lead agents are being assigned for service areas that have more than one Service's facilities. Lead agents ensure that delivery of health care within the service area is optimally managed and resources and health services are effectively utilized and, where necessary, shared. Redundant and/or unnecessary functions will be eliminated. One of the objectives of the program is to reduce CHAMPUS and other non-direct care costs through exploitation of excess facility capacity.

A further step toward health resource integration is in the designation of certain referral facilities as providers of Specialized Treatment Services (STSs), which will control high cost, and high technology procedures (e.g. organ transplants), reduce duplicate services, and force designated civilian facilities to be cost competitive.

TEST AND EVALUATION STREAMLINING

Test and Evaluation (T&E) supports the acquisition process by providing the capability to support weapon system and technology developments, to verify the achievement of performance thresholds, and to determine operational effectiveness and suitability. The T&E infrastructure must be responsive to the aggregate needs of the following communities: science and technology, research and development, weapons acquisition, operational test, and product improvement. DOD's test range infrastructure enables acquisition decision makers to get the hard facts necessary to evaluate the progress that weapon systems are making in their development and to determine what technologies are ready for system application. As part of the continuing Roles and Missions review, OSD and JCS are undertaking fast-track studies to streamline the T&E infrastructure by considering: an executive agent as single manager for T&E ranges, designating a lead Service for T&E of certain classes of systems, and electronically linking Service ranges in CONUS. DOD's T&E infrastructure manpower has downsized by 11 percent since 1990. DOD has also combined and integrated testing activities and eliminated unnecessary duplication. This is an ongoing process.

DISTRIBUTION DEPOT UPDATE

After successfully operating a San Francisco Bay Area prototype of depot consolidation for two years, DLA assumed control of all service distribution depots in the spring of 1992. This consolidation of supply depots was designed to save money by reducing overhead, improving work practices, eliminating unneeded facilities and foregoing construction of other facilities, and standardizing computer support systems.

Against a baseline of 25,700 people in fiscal year 1989, we have reduced over 2,300 people. We have vacated 2.4 million square feet of warehouse space and have foregone construction of over $200 million of facilities. Thus far, we have saved a total of $340 million.

All of this has been done with improved service to our fighting forces. Performance across the board has improved as evidenced by most key depot indicators showing improvement during the past 2 years.

Of particular note is the improvement of stewardship of the resources entrusted into our care by the American tax people. By the end of this fiscal year, materiel which had been deteriorating at former Army depots will be processed either for disposal or for proper preservation and storage. Inventory programs to properly account for the material in our warehouses are in place which will help preclude unnecessary procurement of materiel. We continue with distribution initiatives directly supporting the fighting forces such as an automated manifest system which will improve asset visibility of materiel in transit

DEPOT MAINTENANCE CONSOLIDATIONS

The Department has already implemented several efficiency strategies to improve the business practices and reduce the cost of depot maintenance operations. They include improving capacity utilization, increasing levels of interservicing, and expanding depot maintenance workload competitions. In support of these initiatives, the Army has closed major depot maintenance operations in Mainz, Germany and is closing the Sacramento Army Depot in California. The Navy will be closing the Philadelphia Naval Shipyard in Pennsylvania, and the Air Force has withdrawn depot maintenance operations from the Royal Air Force Base at Kemble, in the United Kingdom.

With respect to maintenance depots, the individual Services confirm that excess organic depot maintenance capacity currently exists in all Services and will grow in the coming years. The Services cannot afford to continue sustaining projected excess capacity. The Secretary of Defense's recommended 1993 base closures, submitted to the Defense Base Closure and Realignment Commission (BRAC) in March of this year, contained eight additional major maintenance depot realignments and closures. While this represents significant progress in reducing unneeded capacity in depot maintenance activities, I anticipate that additional maintenance depots will be nominated for realignment or closure as part of BRAC 95.

The Department has also made significant progress in reducing the depot maintenance workforce in a balanced manner with force structure reductions. At the end of fiscal year 1987, the maintenance depots employed 155,000 civilians. The number of civilians employed in the depots at the end of fiscal year 1993 is expected to be about 114,000, a reduction of 41,000 personnel—a 26 percent decrease. The recently proposed base closures will reduce civilian employment at the depots by as much as an additional 20,000 personnel.

In these difficult economic times, and with reduced defense spending, private contractors are also seeking work. Nonetheless, we cannot afford to pay for excess capacity in organic depots and in industry. Thus, the Department will be examining alternative approaches to reduce excess capacity in the depots in our Bottom-up Review of defense needs. The role of industry will be considered along with consolidation alternatives in this effort.

DEPOT MAINTENANCE COMPETITIONS

In recent years the Department has expanded the Public-Private Competition Program, which increased the amount of depot maintenance workload awarded through competitive means among government activities and the private sector. Private sector competitions were already ongoing outside of this program. The objective of the program is to obtain the best value for DOD and to accomplish the Department's mission in the most efficient manner possible while retaining the necessary readiness. The values of the competitions in fiscal year 1992 were approximately $175 million (Army $54 million, Air Force $116 million, and the Marine Corps $5 million). Force structure related weapon system phase-outs have resulted in cancellation of some competitions and all the awards have not yet been made. While the competitions involved a higher percentage of workload than previously performed by depots, the results thus far indicate that the government depots have won more competitions than private industry.

As the Department expanded the public/private competition program to make more government depot work available to bid from industry, several industry associations raised concerns about differences in public and private sector industrial activities that might complicate our goal of achieving fair competition. The ongoing depot study is taking full account of these issues.

FENCE-TO-FENCE SURVEY

The "fence-to-fence" facility survey is a very timely opportunity for DOD to create a credible means for identifying repair requirements and to develop a strategy for improving the condition of our facilities. The Department has determined a scope of work that defines the process needed to conduct these facility condition assessment surveys at selected installations. This project will give us industry based inspection standards, an automated methodology to collect and process deficiency data, a multi-year maintenance and repair plan for each participating installation, and management information to better assess facility requirements and priorities. We expect to contract with an architect-engineering firm in August. A test of the process developed, including conduct of inspections at the pilot installations, will start in February, 1994. Evaluation of its effectiveness should be complete by December, 1994.

OVERSEAS FACILITY REDUCTIONS

The Department continues to cut back bases overseas at a much faster rate than our domestic closures. Of a total of 1669 overseas sites, the Department has already announced the return or partial return of 748. We are continuing our review of our overseas base structure to determine if there are more returns or reductions possible. The bottom line is, the Department simply can't afford to spend money on unneeded defense infrastructure, overseas or in the United States, and we are moving rapidly to reduce unnecessary overseas bases.

The Department is cutting back the U.S. force presence in Europe at a significant rate. These reductions are on such a steep ramp that any attempt to accelerate the process would cause even more turbulence for service members and their families.

The U.S. military presence will continue, albeit at significantly lower levels, at key overseas locations. Therefore, some construction continues to be essential to support the missions, relocation and consolidation of those remaining U.S. troops and their families.

Residual value negotiations have slowed due to the uncertain economic climate in Europe. The amount of residual value payments we will eventually receive and the timing of payments will depend on a variety of factors. These include the negotiated value of U.S. investment, offsets for damages, and the ability of the host nations to pay. While we were concerned that environmental claims could be significant and reduce residual value, host nation environmental damage claims have not exceeded our estimates. Although we believe residual value negotiations may ultimately result in significant compensation to the U.S., it is important to bear in mind that the process will be lengthy and host nations will undoubtedly ask to spread their payments over several years.

Over $3 Million was deposited into the Department of Defense Overseas Military Facility investment Recovery Account during fiscal year 1992. This amount was received from Germany for approximately eighty to ninety facilities returned to Germany, mostly during the 1970s and 1980s, and represents the culmination of residual value negotiations that extended over many years. The United Kingdom and Germany, as part of a Quadri-national agreement (U.S., U.K., Germany, and Italy), paid $2.4 million for our facilities at Decimomannu, Italy. That transaction is now being processed into the Recovery Account. For their part of the Quadri-national and Bilateral (U.S. and Italy) agreements, the Italian Government has agreed to pay the United States $3.8 Million. Also, the U.S. is depositing almost $1.6 Million in the Recovery Account for the residual value of U.S. investments at Goose Bay, Canada. Reuse of funds in the Recovery Account is under consideration by the Department.

Force reductions are also underway in other areas. It is anticipated that more troops will leave bases in the Far East, once the North Korean threat has subsided. The U.S. military forces withdrawal from the Philippines was accomplished in November, 1992. Reductions continue in Panama where all U.S. troops and their families will depart by the end of 1999 in accordance with the Panama Canal Treaty.

1993 Domestic Base Closure Program

I would like to now turn to domestic base realignments and closures.

This year, the Secretary of Defense has recommended closing 31 major bases, realigning 12 others, and reducing 122 smaller bases or activities. The 1993 recommendations are currently before the Defense Base Closure and Realignment Commission. The General Accounting Office (GAO) has completed its report on these recommendations finding the recommendations and the selection process to be generally sound and the savings substantial. The Department has not yet completed its detailed comments on the GAO report. However, on May 10, 1993, DOD provided a preliminary response stating that the Department concluded its standards for cumulative economic impact analysis were supportable and, while there may be some minor technical problems with cost estimating, savings are still substantial.

The 1993 recommendations, when coupled with the 1988 and 1991 approved domestic closures, will reduce our domestic physical plant by 15 percent. Worldwide, the reduction in physical plant will be 20 percent, when planned overseas closures are factored.

Today's forces consist of 14 active Army divisions and 7 separate brigades, 448 battle force ships, 79 Navy and Marine Corps attack and fighter aircraft squadrons, 56 Air Force attack and fighter aircraft squadrons, 117 strategic and conventional bombers, and 852 land based ICBM's. Forces planned in the budget are substantially smaller.

When all of the 1988, 1991 and 1993 closures and realignments, plus the planned overseas reductions, are implemented, the base structure will be larger than necessary for budgeted force levels. Consequently, we can expect a significant 1995 base closure announcement. We anticipate that military personnel stationed in the United States will decline by 30 percent from 1985 levels. With a reduction of only 15 percent in domestic physical plant announced to date, future closure and realignment decisions will be critical in order to balance the overall base structure to the Clinton Administration's planned force levels.

IMPROVING BASE CLOSURE IMPLEMENTATION

Lastly, I would like to close with a description of our efforts to improve base closure implementation.

The Department's highest priority is to close or realign installations as soon as possible, in order to make these properties available for civilian reuse. We have embarked upon an ambitious program to implement the recommendations of the 1988 and 1991 Commissions. Those initiatives are on schedule and making significant progress.

The Department is also committed to supporting the reinvestments necessary to restore economic growth including investments in people, industry and communities. DOD has initiatives such as the Homeowner Assistance Program and various military and civilian transition programs designed to help displaced workers. As I stated earlier, the Department is promoting investment in dual use technologies and the integration of commercial and military business sectors. To help support the economic growth of affected communities, DOD has an extensive community reuse and grant assistance programs administered by the Department's Office of Economic Adjustment. The office also acts as the staff for the President's Economic Adjustment Committee, which coordinates federal government support to local communities. In fiscal year 1993, DOD provided $80 million to the Economic Development Administration to help communities transition into the private sector and $75 million to the Department of Labor for assisting dislocated private-sector workers.

Additionally, as Secretary Aspin has stated, DOD wants to ensure, wherever possible, that environmental cleanup is not a barrier to economic recovery. DOD has spent and will continue to spend significant defense resources on environmental restoration, but we will need help to streamline the process.

In the past, bases were closed in three distinct phases. First, the military service concerned closed the base by reducing and eventually ceasing operations. Separately, other parts of DOD were working on cleanup, with funding and schedules determined independently of closure schedules. Once the property was declared excess, the General Services Administration began disposal proceedings, if and only when, cleanup had been completed. Lastly, DOD's Office of Economic Adjustment was all along trying to help communities recover economically. It is no wonder that success was painfully slow. Secretary Aspin plans on integrating these functions within the Under Secretary of Defense for Acquisition.

However, DOD is not waiting for organizational change. We have already begun implementing a plan for accelerating closure, cleanup and reuse of closing military bases. We are working to close bases faster, accelerate environmental cleanup, connect the cleanup required to the local communities' planned reuse, promote integrated local reuse plans, and focus DOD on the local community needs.

The Department of Defense can do much on its own to improve this process. We can exercise strong oversight to ensure schedules are accelerated but also integrated, appropriated funding is requested from the Congress, and policy and procedural impediments are removed. DOD will improve relationships with the Environmental Protection Agency and its regions, and will foster partnerships with local communities to identify barriers to reuse and to develop solutions.

In the environmental cleanup area, the Department will reestablish the Defense Environmental Response Task Force, work with the Environmental Protection Agency Leadership Council, and conduct regional DOD, EPA, State, and installation conferences.

We will need Congress' help to remove impediments; for some, we have identified and submitted legislative proposals. Some impediments, such as the recent provisions of law regarding indemnification, we know as problems, and we are working to develop an appropriate solution. Some are yet to be discovered, as we begin working much more closely with local communities and environmental regulators.

The Department is committed to doing everything it can to help communities, industry and people recover from the necessary defense drawdown. DOD's fiscal year 1994 budget request includes $2.3 billion in defense conversion spending, a substantial commitment of defense resources to this initiative.

CONCLUSION

The Department of Defense is undergoing unprecedented change which will have significant impact on defense infrastructure.

A number of important initiatives are ongoing, such as the Bottom-up Review, and hence it has been difficult to answer all of the committee's questions. We simply don't have all the answers yet but we're working hard to get them.

Thank you for the opportunity to be with you today. I will do my best to answer any questions you may have.

Senator INOUYE. Thank you very much, Dr. Perry. Before we proceed with questions, may I call upon Senator Stevens.

Senator STEVENS. I am sorry. I had another matter, and I apologize for not being here earlier, Dr. Perry. I am quite interested in several matters from your statement that I have read through. I will wait my turn. Thank you.

Senator INOUYE. Senator Domenici?

Senator DOMENICI. I will wait, also.

Senator INOUYE. Obviously, Dr. Perry, your assignment is the most difficult one, I believe, in the Department. You have to do something that has been established and we politicians have accepted as permanent. Change is always difficult to even imagine. You can imagine how difficult it is to accept that.

SUBMARINE INDUSTRIAL BASE

Some have suggested to us that on the matter of industrial base that we should hold up our later versions of submarines, the new versions of submarines, and place them into service after the older boats have reached their service life. In so doing, we do not need to build any new submarines well into the 21st century. As you know, the present approach is to put away the older ones and replace them with the new ones. Do you think this has any merit?

Dr. PERRY. I think it has merit, Senator Inouye, although in my judgment that is not the preferred solution. It is certainly one we considered very carefully. As I see it, there are two fundamentally different alternatives dealing with the situation we face with submarine production.

The first is to simply shut down the submarine production facilities, and then at some date in the future, around the turn of the century or early in the next century, we restart them. That is a perfectly viable alternative and one we have seriously considered.

The second alternative is to keep a small production rate going until we are ready to build the next generation of submarines, which will be early in the next century. The argument in favor of that is that it keeps some minimum production capability going for two reasons.

First of all, we do not lose the skills involved in building submarines, which are primarily in the heads of people who are working at the submarine facilities; therefore, that means we keep a cadre of people continuing that work. That is the group from which we will build when we start production again.

The second reason for it is that if there is a dramatic change in the world situation and we need to reconstitute our military forces, we need to build submarines rapidly, we could do it much more effectively if we had a—I would not call it a hot production base, but a warm production base available.

Senator INOUYE. So you think it is possible by closing up these places and reviving them sometime in next century?

Dr. PERRY. I think that is a feasible solution, in my judgment. Not the preferred solution because of the loss of skills that would be involved. The people who have the key skills in their heads would disperse to other activities and it would be very, very difficult to pull them back together again 5, 6, or 7 years later.

That alternative is most attractive when you believe that the new production will be dramatically different and use dramatically different production techniques than the old production. That is not likely to be the case in nuclear submarines.

Senator INOUYE. I am certain you realize that this is a very controversial matter.

Dr. PERRY. I do, very much.

Senator INOUYE. We have had many rather traumatic debates on the Senate floor.

Does your plan call for maintaining two submarine bases?

Dr. PERRY. Senator Inouye, we have not quite completed the plan yet. I am giving you a status report on it. But as I see it in formation now, it would be keeping one, not two, and keeping it at a very low production rate.

Senator INOUYE. You mentioned the difficulty you are having on base closures. One of the questions that we are constantly deluged with by just about every Senator, when is this base going to become available? We have been trying to tell them what we think is the reason for this delay, that it takes a long time to go through this process, the cleanup process is difficult and takes a long time. We note that there is a proviso in the 1993 authorization act, the Defense authorization act, which directs DOD to indemnify future recipients of DOD property and facilities that have been closed.

As a result of that, the counsel in DOD instructed his principals that these provisions would expand DOD liability. That led the Pentagon to implement a moratorium on all transfers and leases. Now, will that moratorium continue?

INDEMNIFICATION

Dr. PERRY. Let me make several comments about that. The first is in my written statement in which I describe this issue. I did not mention it in my oral statement. Second, I think this is a very important problem. The Department has not performed well in that area in the past; that is, we have not moved quickly enough in effecting the transfer of the bases and assisting the communities on their use of these bases.

A big part of that problem has been the one that you mentioned, which is the hangup over the responsibility for the environmental processes. We have several actions underway to correct that problem today and I am totally committed to improving that process substantially.

The first of those is doing all of this work in parallel. That is, we can be doing the environmental work in parallel with the other actions which are going on instead of doing them in sequence.

The second is that we will be asking the Congress for some modification in the legislation on indemnification. I will be as clear as I can be about what our position is, which is we believe the Department is completely 100-percent responsible for all of the environmental effects which were caused by the use of the property when we had it. We do not want to be in a position of being responsible for environmental damage after we surrender the property. We think the language in the law is written in such a way now that it creates ambiguities. If we can get that ambiguity clarified, we can move much more quickly on these environmental issues.

Now, specifically to answer your question, what we have in effect now is not a moratorium, but a requirement that no transfer be made until it has come to my Office for approval. I have, in at least one case, made such an approval for accepting that indemnification and am prepared to do it in other cases when it is necessary. But in the meantime, I am working to improve legislation so that we can do this in a more routine fashion.

Senator INOUYE. Dr. Perry, I have instructed my staff to look into this matter, with the hope of coming forth with amendments that we can incorporate in the supplemental appropriations act which is now pending before us.

Dr. PERRY. I would appreciate that.

Senator INOUYE. I hope we can work together so we can expedite this. Because there are a lot of communities that are waiting, and I believe many of them are willing to assume such liabilities. In those cases, I do not see why the transfers cannot be effectuated.

Dr. PERRY. Yes; I am willing to consider on a case-by-case basis every issue that is before us now, and I am very happy to hear that you will work with us to improve the legislation so that we can do it in a more routine fashion.

Senator INOUYE. Do we have any guesstimate—because I presume at best it would be a guesstimate—as to what we can anticipate as costs for cleanup?

Dr. PERRY. I do not. Let me ask Mr. Berteau if he has any feeling for that number.

Mr. BERTEAU. Mr. Chairman, are you referring to the bases that have already been approved for closure?

Senator INOUYE. Yes.

Mr. BERTEAU. The 1988 and the 1991 closures? We have an estimate of that in some detail and I will provide you that for the record.

[The information follows:]

CLEANUP EFFORTS AT 1988 CLOSURE SITES

We estimate that cleanup efforts at the 1988 closure sites will cost about $756 million, of which $718 million is from the Base Closure Account. Cleanup efforts at the 1991 closure sites will cost about $1,315 million, all funded from the base closure account. Overall, that is a total of about $2,071 million.

Mr. BERTEAU. We have also looked at the funding for the 1993 closures that would be needed to accelerate the process. For example, if we are going to cease operations, we may be able to increase the rate at which we drill the holes in the ground and do the testing and that sort of thing.

We found a shortfall for the 1993 proposed closures, pending the Commission's resolution of that, of about $300 million spread out over the next 2 or 3 years. And I will provide you the detail of that as well.

[The information follows:]

CLEANUP COST SHORTFALL

There is a shortfall of about $410 million for the bases the Department of Defense nominated for closure and realignment for the 1993 commission. About $364 million is for cleanup costs at both closing and losing installations which are not currently in the budget; the balance is for additional compliance costs at gaining installations.

Any changes the Base Closure Commission makes to the list of bases nominated by the Department will change those estimates.

Mr. BERTEAU. The rest of it is, in fact, already funded and in the budget.

Senator INOUYE. You made a very important policy statement. I am not certain if the members of the committee caught it. You said you would prefer to call it a national industrial base and not the defense industrial base, with an eye of going to the commercial sector.

Dr. PERRY. Yes.

Senator INOUYE. That is quite a change as you know.

Dr. PERRY. It is.

FFRDC

Senator INOUYE. Will that approach or concept apply to FFRDC's? Some have suggested why not go to the commercial sector and go by competition.

Dr. PERRY. The role of the FFRDC's, as I see it, Senator Inouye, is to work only on those programs for which the private sector is inappropriate; for example, serving as a technical evaluator of competitive proposals among different contractors or helping a Government agency prepare a proposal or a technical part of a proposal which is going out for competition.

So, to the extent the FFRDC's are limited to that sort of activity, it would not be reasonable to transfer that into private industry. There have been complaints from private industry that the FFRDC's are expanding their activities beyond that. I think the solution to that is a strict enforcement of the role that FFRDC's are only given contracts for which they are a unique source; that is, for which private industry would not be an appropriate source.

If we strictly enforce that, then I think that meets the objections from the industrial concerns.

Senator INOUYE. So you would apply the concept of competition to this activity also?

Dr. PERRY. No; the FFRDC's would only be allowed to work on Government programs for which a competition was inappropriate; that is, they could only be given tasks on a sole-source basis. An example is programs which you could not compete in private industry because of the disclosure of proprietary information from one contractor to another.

Senator INOUYE. Well, we have been advised by certain companies that the established FFRDC's are carrying on activities that they are fully competent to get involved in and they could do it for much, much less than what the FFRDC's are receiving.

Dr. PERRY. To the extent that is true, that is a misuse of an FFRDC. The FFRDC's should only be given contracts by the Government for which private industry is not an appropriate source.

So if that is true, it is a failure of the administration of the FFRDC's, but not a failure of the concept.

Senator INOUYE. In your conformation hearings, Dr. Perry, you said the following, that the Pentagon will "focus efforts of our DOD labs and FFRDC's toward dual-use technology projects."

Dr. PERRY. Yes.

Senator INOUYE. Are you suggesting here that only the FFRDC's could involve themselves in dual-use technology projects?

Dr. PERRY. No; I am sorry. That is not the connotation I meant with that. Let me be very clear, the emphasis on dual-use program is primarily an emphasis in private industry. And indeed, the Technology Reinvestment Program, which ARPA is now administering and which is the largest single program we have in that area, is a series of proposals for private industry to respond to. It is not a program for the Government laboratories or for FFRDC's. They are not allowed to compete for those programs, in fact, precisely because private industry is capable of doing it.

What I meant by that statement was that to the extent the Government labs and FFRDC's are in an oversight or monitoring position of a program, there will be a greater emphasis on dual-use programs simply because we will be doing dual-use programs.

But the dual-use initiative is primarily directed at private industry, not at Government laboratories or FFRDC's.

CONSOLIDATION OF LABS AND TESTING

Senator INOUYE. I note in your statement that there is much movement toward consolidation. Some have suggested that you may go further than that and not just management of R&D and testing, but also acquisition. Do you have any thoughts on that?

Dr. PERRY. Yes; I will give you my opinion on that based on previous experience in the acquisition system. We now have a new Under Secretary of Defense for Acquisition and a new Director of Defense Research and Engineering who will be forming their own judgments and making their own recommendations.

My opinion though, from my own experience, is that the acquisition system works most effectively when it is executed in the services with oversight from the Office of the Secretary of Defense. I have never favored a so-called acquisition corps, where all of the acquisition for the Defense Department is done by the Office of the Secretary of Defense.

I believe it is important to maintain a close connection with the users in the services. The one area in which I think it is worth considering an exception to that is in the technology-based programs, the 6.1 and the 6.2 programs. One might consider a consolidation of those programs under OSD direction. I imagine the new Under Secretary and the DDR&E will be considering that as an option. But I would not favor the consolidation of the larger acquisition program, and I am very clear on that judgment.

Senator INOUYE. Last year the Pentagon considered creating three new agencies: Defense Research Office, Defense Research Development and Acquisition Agency, and Defense Test and Evaluation Agency. Are these still under consideration?

Dr. PERRY. Not by me, Senator Inouye.

Senator INOUYE. So it is a dead deal.

Dr. PERRY. As far as I am concerned it is; yes.

Senator INOUYE. What are the requirements for in-house DOD labs and lab research tied to DOD force structure?

Dr. PERRY. Could you ask the question again, please?

Senator INOUYE. The question is, Are you considering increasing use of university and industry research capabilities in order to reduce the in-house DOD lab infrastructure?

Dr. PERRY. No; I am not, Mr. Chairman. As the defense budget goes down, we will try to hold the technology base portion of it essentially constant. But that will be difficult. There will be some slight decrease in it, too, I imagine.

LABS AND TESTING

The danger that I see is that, if the technology base budget goes down, there will be a tendency of the services to provide for their service laboratories first and so all of the reduction then will go to industry or to universities. I think our job will be to prevent that from happening, and if there are reductions, to have them felt equally in the Government laboratories and in the universities.

I would hope to avoid that to the greatest extent possible in the basic allocation of the budget, which is to hold the 6.1 and 6.2 budget constant, even while the rest of the budget is going down.

I might also say, a point which is often overlooked, that as our production budget goes down—production of these systems is done in industry primarily. Industry, besides the Government R&D contracts they bid on, has something called, as you well know, independent R&D or IR&D.

A major part of our defense technology comes from this independent R&D program which is done in industry. And as production comes down, the size of that IR&D program comes down proportionately, because that figure is a percentage of their total revenues.

Therefore, even if the Government contract for R&D stays at the same level, there will be an inevitable decrease in the technology work being done in industry because of this reduction of IR&D. That, to me, is the most significant problem that I see in the defense technology base today.

Senator INOUYE. I have many other questions, which I will come back to. But this is the last question for this round. I have noted that in the process of closing bases and bringing down the so-called national defense industrial base, we may be taking steps that will be final.

For example, there are many areas with training sites and target sites. Once you give them up, when new communities come about, the pressure would be such that you could never revive these training sites and target sites. The same thing with industrial base where you have presently located on the water, for example. Once they are gone, I do not know where you can go to.

Are these factors considered?

Dr. PERRY. I believe they are. Whether they are considered sufficiently is a very good question. I think a reflection of the consideration is that while over a period in which our budget has gone down almost 40 percent, we are seeing only about a 15-percent reduction in capital assets of our bases.

BASE CLOSURES

That partly reflects the political difficulty of getting base closures, but it also reflects this very real concern that once you close a base, you have lost it and you have lost it probably irretrievably. It is hard to imagine being able to reverse that process once it happens.

You also point out we will have the same problem with a defense industrial base. Once you close down the submarine production facility, it will be a very difficult process to get it restarted again, not so much because of the physical facilities at that base. In this case, it is more of a problem of the intellectual capital rather than the physical capital that you are losing.

Senator INOUYE. Thank you.

Senator Stevens?

Mr. BERTEAU. Mr. Chairman, if I might add to that. In the base closure process, we have a lot of analyses that we do under the rubric of military value. In fact, four of our eight criteria focus on military value.

In the context of doing that, each Department not only looks at which bases are going to close, but also at the process that rank orders the bases that are most important to keep open as well, frequently in bands, not in pure priorities.

For instance, across the board in Army operating bases, in Navy airfields, in naval stations, and in the Air Force bases, we are looking at, in fact, preserving and enhancing those of most importance and most value, that give us the maximum opportunity for training, with the expanded requirements for maneuver training on the ground and in the air.

That is a fundamental part of the process that leads to the recommendations for base closures. We need to do a better job of looking at the same thing from the point of view of industry, because we do not have a similar evaluation process that we can do there. The potential alternatives are much more complex and complicated. We do consider that very thoroughly in the base closure process.

Senator INOUYE. Thank you.

Senator STEVENS. Thank you very much.

Dr. Perry, as I said to you privately—I want to say it publicly—when you came back to the Department we were delighted, because of the experience that we have had before in dealing with you. I do want to state the outset. A man of great credibility and capability, we are glad to see you there.

Dr. PERRY. Thank you very much, Senator Stevens.

Senator STEVENS. As the arguments start, I hope you will remember that.

Dr. PERRY. I will brace myself.

Senator STEVENS. No; I just think we have some honest differences of opinion in terms of some of these matters. I want to go first to the NATO infrastructure fund.

NATO INFRASTRUCTURE FUND

Last year we put a limit of $60 million on the NATO infrastructure fund and we were informed yesterday that the Department has actually spent $158 million by shifting prior-year funds. Those moneys were spent without notifying Congress.

Now I might be inclined to not say anything about it in terms of being critical, but for the fact that, as you pointed out in your own statement, the residual value of negotiations have been slowed. We may eventually receive some of those moneys. But we are increasing our payments into the NATO infrastructure fund beyond what Congress authorized and we have not been receiving the residual values that we thought we would get.

I am about ready to propose that we fence the use of NATO funds for the future from any source until we make some progress on the residual value payments. What would be your reaction to that, Doctor?

Dr. PERRY. First of all, I would have to say you surprise me with the comment about the $158 million. I have not heard that, so this is the first I have heard that statement. I need to go back to the Pentagon and find out what is going on in that area.

Senator STEVENS. There will be other days. I do not want to blindside you on that, but that is my information.

Dr. PERRY. Well, assuming it is correct, then I guess I would have several comments.

Senator STEVENS. Let me not assume that it is correct. There is no reason for me to assume my information is better than yours.

Dr. PERRY. It may just be a matter of timing. It may be something coming to me that I have not seen yet.

Senator STEVENS. The residual value negotiations is another question.

Dr. PERRY. Were we to do that, we had a responsibility to discuss it with the Congress.

Senator STEVENS. It does seem to me that we are continuing to pay, and our NATO allies are not making their payments, and yet we seem to be increasing payments as our responsibilities over their decrease, but we will pursue it.

Let me go on to another matter, and that is base closures. I hope you do not mind if I jump around here because of my notes I made during your statement. You made the statement that it is anticipated more troops will leave bases in the Far East once the North Korean threat has subsided.

It is less than 3 months ago that I was over there, and Senator Inouye and I have been traveling the Pacific each year to try to keep an assessment of the situation in the Pacific. I have come to the conclusion—I think we share that conclusion—that if there is a remaining real threat to the United States it is going to come from the Pacific.

PACIFIC SECURITY

Six of the seven largest armies in the world are in the Pacific and continue to operate. We find throughout the Pacific a fear, and it is a stated fear, it is not a felt fear, that the United States will abandon the Pacific, and yet we seem to be maintaining a very high level, relatively, of presence in Europe with a decreasing level in the Pacific, and this is not a classified hearing, but I have seen nothing to indicate that the North Korean threat will subside in the balance of this century. Do you have some information that has not been made available to us?

Dr. PERRY. Let me take the opportunity of your question to talk on that subject a little bit, if I may. I just returned from Korea and Japan. I was there last week and I also visited Hawaii and Alaska as well. I was visiting the Pacific Command.

The primary purpose of my visit was to state clearly and unequivocally the administration's commitment to permanent forward presence in Japan and Korea. I stated that in public speeches and I stated it to the leaders of the Japanese Government and the Korean Government.

Now, to put in context the remark I just made, we started a few years ago something called the East Asia strategy initiative, the purpose of which was to bring a modest reduction in the troops over there, and I am talking about 15 to 20 percent. That reduction has been made in Japan. We delayed it in Korea. It was to go from 36,000 roughly to 30,000 troops. We delayed it because we thought it would be sending the wrong message to North Korea at this time.

Now, what I said to them and what I was trying to convey to you is that even if we go back to that East Asia initiative and pull those 6,000 troops out, my judgment is we hold the line at that point, which is 30,000 in Korea and 40,000 in Japan. What I was doing in my statements in Japan and Korea was emphasizing the positive aspect of that, which is we are going to maintain that forward presence.

Now, specifically to the question, I have no reason to believe that the threat from North Korea, the nuclear threat, is going to go away any time in the foreseeable future. I am gravely concerned about it.

We have a series of actions underway which, if they are successful, will stop the North Koreans from reprocessing the latest batch of plutonium which is coming out from the reactor. That will be an important thing to do, but that does not remove the long-term threat in Korea, and as long as that government is in place there, I see a substantial threat from the government.

Senator STEVENS. Well, Senator Inouye and I went to Korea in one instance after consulting with your predecessors to let them know that we were going to maintain the commitment of forces but part of those forces would be stationed in my State, I do not know if you know that, and these were particularly the F–15's that were committed to Korea but are stationed at Elmendorf.

Dr. PERRY. Yes; I visited Elmendorf and discussed this with General Ralston while I was on my trip.

Senator STEVENS. I am looking at the basic concept of the amount of force that is available to the Commander in Chief of the Pacific. It is very thin. That is why I am going back to your comment that you believe that the force structure, the base structure, will be reduced primarily I take it when we come from the 1985 levels, when we come to the 1995 base closure announcement.

I would urge you—I am pleased to hear you were in the Pacific, but I would urge you to travel where we have traveled, down to Indonesia and Australia and into Singapore and some of the other places and see how they feel about the force structure.

Dr. PERRY. I intend to do that.

Senator STEVENS. They think it is inadequate now in the Pacific. In fact, we found the Australians had moved their force structure in their own country to the north and to the west, because of the increasing threat that they perceive in their own country from the realignments of forces of the Pacific. I found that very, very interesting, Doctor. I think it is the kind of thing very few people are looking at.

There are really strains in the relationships in the Pacific and they are as serious, I think, as the strains in Bosnia. There are very serious strains out there, but I would urge you to consider what we have done in the past to try and hold the level of forces in the Pacific. That is my message.

Dr. PERRY. I would like to strongly support and identify myself with the positions you made. I strongly support them, and I have talked with the leaders in most of the countries you mentioned. They are very, very clear that the U.S. force presence in Asia is a major factor in the stability of that region, and it is a factor for which there is no substitute.

Senator STEVENS. Very good. I think the two of us agree wholeheartedly.

FFRDC'S

Let me go to the FFRDC. I have in the past tried to find ways to reduce the level of funding for the FFRDC's, and Doctor, it is based on a series of hearings that I participated in in another committee where we were looking at the changes in NIH. I think this is quite comparable.

We found vacant desks all over NIH and we found building up outside of NIH, a lot of bricks and mortar, new buildings all over the country, but particularly in this area, and people that used to be at those desks are over there in these other groups, and they are the equivalent of FFRDC's. They are using almost 100 percent Federal money. It is not participating in the commercial sector, it is creating a new, dependent structure totally dependent upon Federal appropriations.

Now, I look at the FFRDC's and I see almost 82 percent of the money that we put up for FFRDC's go to three institutions, three organizations. Now, those three are in a level under this new budget about $1.27 billion. The others altogether get $303 million, but the people that come to see us are from the little ones.

Every time we start to go after the FFRDC accounts, we get people in from Rand and Project Air Force, and all of the others who are complaining about our comments about the FFRDC's, so let me just concentrate on the three.

Those three work under concepts that do not involve pay caps. They do not involve limitations on expenditures established by Congress, and they are apparently almost open-ended contracts. Lincoln Labs, for instance, was $327.5 million in 1992, actually, $337 million this year, 1993. The estimate that we have received now is $464.8 million, an increase of over one-third in 2 years.

It is constantly expanding and if you want to look at it, the problem is that they are all chiefs. There are no Indians around there.

Why cannot more of this work be done in the Department and not be contracted out?

Dr. PERRY. Taking Lincoln Labs in particular, what the Department is trying to get there is specialized technical expertise, and the reason they are not getting it in the laboratories among other things has to do with the pay caps in the laboratories. That is, the FFRDC's, of which Lincoln Labs is a good example, have salaries that are competitive with industry, not on Government standards.

That is the principle on which their salary is determined, and there is oversight of the salaries there, but it is based on whether they are competitive with industry, neither noticeably above nor noticeably below.

The question, then, is why you cannot get that equivalent talent in Government laboratories under civil service regulations and under civil service salaries.

Senator STEVENS. Well, we reacted to that, and Mr. Cortese reminds me we did that in the NIH area, too. We gave NIH the right to go beyond their caps in order to attract people for specialized jobs based upon some findings.

We have already tried to do that with DOD. We could do it even more, but the basic problem I find is when I go there, when I visit these places, I find I am dealing with people who spend a year or two in the Department and discover what a great bonanza out there in those FFRDC's, and the revolving door is not one after retirement, the revolving door is one after awareness. They will not stay because they are getting paid so much more for doing the same thing in these labs.

That growth cannot be sustained. We cannot give Lincoln Labs over $100 million more than they got in 1992 for examination and programs that have already been cut 30 percent.

The point is, as your dollars in-house are going down, your dollars out there in the contractors, people that are examining the program that is going on in the Department, is going up at a staggering rate. We have twice tried to get to it. I think it is at the expense of high-paid career employees who stay with their careers, and out there are the ones who are attracted by the big dollars in areas where there are no real caps, and to me, I urge you to take some steps to reduce this FFRDC money.

Dr. PERRY. I will look very specifically at that, Senator Stevens. My judgment is that the budgets and the staffing levels for the FFRDC's should be on a decreasing pace right now.

Senator STEVENS. I might say that with regard to the small ones, that is the case. Nine of the current FFRDC's are holding the line and several of them are actually being decreased, one being totally defunded. There were 13 last year, but it is not one of the bigger ones that is being defunded, it is the little ones.

The problem is that whenever we see them, whenever they come in to see us—I assume they come to see Senator Inouye the same as they do me, there are people we have known who worked a couple of years where you are, and with due respect, if the Government can attract you back, we ought to be able to hold some of those other people for a few years more.

I am reminded we do have a freeze on DOD and civilian and military appropriations and salaries. There is not even a cap on FFRDC.

Dr. PERRY. That is right.

Senator STEVENS. Why do we not at least put a freeze on them? I once did that, did you know? The Congress once passed my suggestion that no one in one of these funded consulting groups could be paid higher than the highest rate for civil service in the Department. That lasted about 6 months.

Dr. PERRY. I will specifically look into what is responsible for that very large increase in the Lincoln Labs. I do not have the answer to that.

Senator STEVENS. I would just draw your attention to those construction programs, C–1.

Dr. PERRY. We will get back to you for the record on this. I do not believe there is intended to be that kind of increase for Lincoln Laboratories, and I want to look into that and find out why you have that figure.

Senator STEVENS. We just got this paper.

Dr. PERRY. I have the same paper in front of me, and I see the same figure on it, but it is a ceiling that is put on here rather than an actual expenditure. I need to find out why that high ceiling was put on it, and I will get back to you on that, Senator Stevens. That does not sound right to me.

[The information follows:]

The ceilings established in the DOD FFRDC Management Plan for MIT Lincoln Laboratories were based on zero real growth in funding level from fiscal year 1991. The established ceilings were $435.21M in fiscal year 1992, $449.64M in fiscal year 1993, and $464.80M in fiscal year 1994. The figures in the table submitted to the HAC staff were the fiscal year 1992 obligations and an estimate of fiscal year 1993 obligations as opposed to the ceilings shown in the management plan. We expect the fiscal year 1994 obligations to be lower than the ceiling, in fact, we have directed sponsors to reduce fiscal year 1994 ceilings below the fiscal year 1993 estimated obligations.

Senator STEVENS. The number I mentioned about the military construction total obligation worldwide, the NATO infrastructure, is on page 89 of this document that we got just this last week, construction programs.

Dr. PERRY. I will also look into that one carefully, but I do not have the answer for either of those.

Senator STEVENS. Thank you.

[The information follows:]

FISCAL YEAR 1993 NATO INFRASTRUCTURE PROGRAM SPENDING

Issue.—Why is NATO Infrastructure spending in fiscal year 1993 projected to be $158 million when Congress only appropriated $60 million.

Summary.—In addition to the funds appropriated, the Department is also authorized to use any unobligated prior year funds; recoupment received from NATO for prior year U.S. investments; and funds that are deobligated as a result of project cancellations, reduced project scope, and low bids. The following table summarizes the current status of U.S. funds available for contributions to the Infrastructure Program:

Available fiscal year 1993 funds	
Fiscal year 1993 appropriation	$60,000,000
Carryover from fiscal year 1992	[1] 20,702,000
Recoupment (as of May 31)	[2] 24,477,000

Available fiscal year 1993 funds	
Deobligations (as of May 31)	[3] 52,642,000
Total available (May 31)	157,821,000
Total obligated (May 31)	[4] 115,976,000
Total remaining for fiscal year 1993 (May 31)	[5] 41,845,000

[1] Following the fiscal year 1993 Congressional reduction, the U.S. did not obligate any remaining fiscal year 1992 funds for new projects in fiscal year 1992 in order to save dollars for "must pay" projects in fiscal year 1993.

[2] Recoupments are funds received from NATO for prior year U.S. investments done with appropriated vice NATO funds. The Authorization Act allows these funds to be reobligated as part of the U.S. contribution to the Infrastructure Program. An additional $8–$9 million could be collected during the remainder of fiscal year 1993.

[3] As a result of cancellations of previously approved NATO projects, some $40 million in obligated funds were deobligated and returned to the U.S. Infrastructure Account. Additional, albeit smaller amounts, are continuing to be deobligated as a result of ongoing NATO actions to cancel unnecessary projects and reduce the scope of others. The Department was aware that some deobligations would occur during fiscal year 1993 but the uncertainty of the total did not allow adjustments to the budget request.

[4] Obligations during the first seven months of fiscal year 1993 were limited to increments of ongoing projects, treaty-related projects, emergency repair/restoration work, and recurring requirements such as support for NATO management agencies. Due to the shortfall of U.S. fiscal year 1993 funds, no new construction, restoration, or recoupment projects can be supported. Before any NATO-funded project can be executed, all participating NATO countries must obligate their share of the total project cost.

[5] Remaining funds will be reserved for required financial increments of ongoing contracts, recurring expenses, and emergency repair and restoration. All available funds are expected to be obligated prior to the end of the fiscal year.

SUBMARINE INDUSTRIAL BASE

Senator STEVENS. Let me go now to the comment you made about minimum capability in terms of the industrial base. We have been searching for answers to the industrial base, but you mentioned the submarine, the Seawolf.

I have got to state right up I have been an opponent of the Seawolf since I first saw it. I think we are going to end up having three or four Seawolfs and not very many attack submarines. Why do we have to maintain industrial base with the largest cost item in the fleet? If we build attack submarines you would have twice as many people who would be maintaining their skills as you would if you continue to build Seawolfs.

Seawolf is designed to be, really, in another circumstance designed to offset the increasing capability of the Soviet Union. It seems to me we might be able to incorporate some of the concepts that were classified into the Seawolf into smaller submarines, but why should we maintain that industrial base by building one enormous submarine that has very little relevance to attack submarine capabilities?

Dr. PERRY. I have to identify with your views on the Seawolf. It is not the submarine I would have proposed in the early eighties, much less in the early nineties.

Senator STEVENS. Well, I wish you would have been there. I have opposed it since I first heard about it.

Dr. PERRY. The question we have given our people looking to the submarine industrial base is: given where we are right now, what is the most efficient way of keeping a minimum capability alive until the next generation submarine comes along, which I am sure will be a much smaller submarine.

Senator STEVENS. Let me suggest to you that I made some inquiries when I visited some of these places. And I was told that not all, but a majority of the skills, could be maintained by just going back and continuing to build some of our merchant marine.

And for 3 years in a row—and this is back before the revolution, you know, when I was chairman of this subcommittee—we put up over $1 billion a year for 3 years. President Reagan would not spend the money. And now we have put up over $1 billion this year and President Clinton is not going to spend the money to continue to build a merchant marine for the United States.

More than one-half of the skills required for the industrial base you want to maintain could be maintained by building ships as opposed to building ships that are below the water.

Now, why do we not look at trying to meet some of the needs, the ongoing needs during peacetime, instead of maintaining a Seawolf that has got no one to chase? You know, a wolf has got to have someone to chase.

Dr. PERRY. We will look at that.

Senator STEVENS. I urge you to go look at that. The old Eisenhower build-and-charter concept—build them, keep the industrial base there in our contractors to maintain the capability to build, but build something that can be utilized in the meantime, and the commercial fleet is what we need.

Dr. PERRY. I think that is a perfectly fair point and I promise you I will look into it.

Senator STEVENS. Well, we are ahead. We are not disagreeing at all.

NAVY PRESENCE IN ALASKA

Let me ask one more question here and that is—and I want you to know, we do not have any navy in Alaska. I guess you know that. Adak has got a little out there, but no floating navy in Alaska left.

I might have an icebreaker coming some day, they tell me. We are the only area in the world that has total periods of frozen ice around our shores that really does not have ice-breaking capability. We have to call in, as we did twice in the last 3 years, the Russians to open up some of our ports. I hope you realize that.

But I note that the concept of homeporting is changing. And back in the days when we were looking into homeporting, we had a study in the early eighties. I think it may have started in the period when you were there before. An analysis of the Navy Office of Program Analysis of homeporting in terms of what is the cost of maintaining ships in ports.

I see a concentration now of moving back in, so we have monopolies in terms of suppliers, monopolies in terms of repair people. Not the diversity that came from spreading out those ships with small suppliers, small repair people being able to participate and, again, maintain some skills for a time when we might need them across the land again.

Why is it that we are abandoning homeporting?

Mr. PERRY. Let me ask Mr. Berteau to deal with that question. I am not well informed on the history of that subject.

Mr. BERTEAU. Sir, when the Navy, in its 1993 base closure package, put together a package that closes the number of naval stations that are there, including some of what would have been the new strategic homeports as well as a couple of very long-standing naval stations, it was with a clear assessment in their minds of the tradeoffs between being able to adequately support the remaining fleet, or spending the dollars, as the Chairman mentioned in his opening remarks, on an infrastructure that was not needed to support the operating forces.

What they are attempting to do, then, is to match the size of the remaining Navy—and they made assumptions. The base closures were built consistent with the Bush base force but, in fact, will be more efficient in supporting a future Navy that is somewhat smaller than that base force. So, the Navy took that fully into consideration as it went through there.

A couple of the new strategic homeports are being retained in the Navy's infrastructure because, again, back to the question of let us keep the best bases open. As you did that assessment, you end up with a better capability to be able to retain and support the fleet both on air and the surface and submarine fleets there.

We are certainly not going down to a level where I would characterize it as a monopoly in terms of support structure.

SHIP MAINTENANCE

Senator STEVENS. Well, I understand forward deployment in Hawaii for ships and in Alaska for airplanes. I think that we can show the economics of that. But when it comes to—take San Diego.

The pressure on San Diego is already great from other portions of the military, but San Diego—you try to take a look at the cost of repairs, the cost of services in San Diego, where there is already this great pressure from other military activities, as compared to having some of those same vessels out in other, smaller ports where people are hungry and have got a sharper pencil in terms of trying to keep alive.

I really do not understand why we should create in specific areas monopolies in suppliers, monopolies in repair capability, and monopolies in terms of just the local infrastructure for the support of military people in general.

Now, by doing away with homeporting, we are going to bring those all back in to about three or four places in the country before we are through, and we are not going to have the diversity of bids, we are not going to have the diversity of training opportunities to maintain this fleet in the future.

Mr. BERTEAU. We have to look specifically at ship maintenance. This is one of the things we are looking at now, which we were not able to do as part of the base closure process. It is, in fact, the relationship between private sector capabilities that exist in a number of places. They are under at least the same amount of pressure and threat to downsize because the market is just not there to support them. So, we have to look at the balance between those two as well.

Senator STEVENS. All right. I hope you will. My indication is that by the time we get through this current realignment we will have 448 ships. That will mean that if we look at 1995, if we do the same thing as we have done in this reduction in 1995, we will increase the monopoly of these areas the have a heavy concentration of military and once again bring them in from the smaller areas along the coastline, and I do not think that is economically improving the situation.

You might close the port but you will find that in the long run the cost of maintaining those ships will be higher in the concentrated port than they would have been if you left them alone. I would urge you study it. I just do not believe that those are cost-effective base closures when we look at the long-term maintenance, supply, and upkeep of these ships. I do believe they would be better off in smaller ports.

Let me thank you again for taking on the task again, Dr. Perry.

Dr. PERRY. Thank you, Senator Stevens.

FFRDC'S

Senator INOUYE. Thank you very much. If I may follow up on what Senator Stevens has been discussing with you on the FFRDC's, this committee has tried its best to gather budget data on spending on FFRDC's, and we have had difficulties. We have been told that your Office has had some difficulty in gathering budget data.

DOD's management plan for overseeing FFRDC performance and spending called for annual reports on cost and value of goods and services provided by each of the FFRDC's. Have you been receiving these reports?

Dr. PERRY. Unless Mr. Berteau knows the answer, I will have to provide that for you in an answer for the record, Senator Inouye.

Mr. BERTEAU. I do not believe the first one is yet due, but it would be coming up before September.

Dr. PERRY. I have not seen such a report.

Senator INOUYE. I thought the first one was due already.

Mr. BERTEAU. I am corrected; it is. It is overdue, and neither of us has seen it.

Senator INOUYE. Would you share that with us?

Dr. PERRY. Yes; we will.

[The information follows:]

The DOD FFRDC Management Plan requires the primary sponsor to annually review the cost and value to the DOD goods and services provided by the FFRDC, assess their reasonableness, and report the results to me through the Director, Defense Research and Engineering and the Under Secretary of Defense for Acquisition. We have received the certification packages from eight of the sponsors. The remaining three certifications are being worked and should be completed in early August.

Senator INOUYE. As Senator Stevens pointed out, as a result of the World War II and the cold war, we began dispersing and establishing bases all over the United States in order to avoid having a heavy concentration in one spot.

Take the east coast, now. You will have Newport and Jacksonville—Norfolk and Jacksonville. What is the plan for Charleston? Is it complete closure? The shipyard is going to be gone. The submarine activities are gone.

Mr. BERTEAU. And the naval station. What will remain, of course, is the Air Force base that is there, and some support activities. But by and large, the surface warfare, naval station, and submarine base are all shut down.

RETIREES AFFECTED BY BASE CLOSURES

Senator INOUYE. This may not be in your shop, but we have had a deluge of letters from retirees telling us that over the years, because of Charleston and their service in that area, they have all gravitated to that area.

There are thousands of homes of retirees. The hospital is there, the commissary and the PX's, the base exchanges, et cetera. Now that it is gone or it will be gone, it is almost impossible for them to move. They are at that age when movement is not that easy. The real estate values, I suppose, will go down.

Has that been taken into consideration on base closures?

Mr. BERTEAU. It is a problem at almost every installation that we close because, as you well know, the retirees do gravitate to those places where they can get the services. Our policy has been, of course, that we both size and operate the facilities primarily as a benefit for the active duty members and their beneficiaries, and so this causes a great deal of heartburn, as it were, through the process.

We have a couple of tests underway to look at the feasibility of keeping certain benefit areas operating at closing bases. One of them is a congressionally directed test to look at consolidating commissaries and exchanges, to see whether or not we could operate them without appropriated fund support, and come up with a feasible and cost-effective way to maintain some of that.

Within the question of medical care, one of the things that we have turned over and, as I understand, is part of the review underway in the administration of the overall health care reform, is the question of what to do with the medical facilities and the operations associated with those at the bases that are scheduled for closure.

So, both of those are being looked at in that context. There is no easy solution, because the other alternative, of course, is for DOD to continue to operate support activities where we do not have any active duty support capability.

In the case of Charleston, you will continue to have the Air Force base there, and so there will be some commissary and exchange facilities, but the big hospital, in fact, is not supported by the remaining active duty population.

Senator INOUYE. In the medical facilities problem, are you working with the Veterans Administration?

ALTERNATIVE USES FOR CLOSED BASES

Mr. BERTEAU. Yes, sir; and, in fact, as we look at the reuse of each installation that's closing, one of the things we look at is whether or not there is a possibility for a hospital; for example, for picking it up and operating as a VA hospital. There is some active interest in three or four that I am aware of and some potential in five or six others, for the hospital to revert to or be operated by the Veterans Administration, or the Veterans Affairs Department now, so that, in fact, we would use those facilities in that regard.

And we look at that as an option at every base that is closing where there is a medical facility, so it is considered as part of that process.

In addition, we take account, from the cost and savings perspective, of the increased medical care costs as part of our assessment. If there is going to be increased CHAMPUS costs, for instance, that goes in as a negative in calculating the potential cost and benefits of any closure action. So, we take account of that increased cost, and the savings have to clearly offset that sort of thing.

Senator INOUYE. I am glad you are doing that because most of the VA hospitals should be torn down. They are old, decrepit, and I think in many cases unsafe for the men and women who have to receive services there.

Mr. Secretary, I have literally dozens of questions, but if I may I would like to submit them to you because most of them are highly technical.

Dr. PERRY. Of course. We would be happy to answer them.

Senator INOUYE. Your responses will be very important as we prepare our report to the Senate, so I hope we can work together on this.

Dr. PERRY. I would be happy to do that.

Senator INOUYE. Now, may I call on Senator Domenici?

Senator DOMENICI. Thank you, Mr. Chairman.

Mr. Secretary, I apologize for being in and out. I clearly planned to be back before you left to just ask a few questions.

First, let me share my observations. You have a very tough job and, from everything I understand, you are very, very qualified. Whether you end up doing what I agree with or not does not detract from what I have just said.

Dr. PERRY. Thank you, Senator.

DEFENSE APPROPRIATIONS

Senator DOMENICI. I think it is going to be tough.

Let me start by suggesting, Mr. Secretary, that ever since the economic summit of 1990, when we went off to Andrews—and everybody is now attacking that agreement as being the cause of our deficit, which is really kind of a joke—I have been an advocate of trying to give the Defense Department more than 1 year of numbers, binding numbers, top-line numbers to work with. And I succeeded. I wanted the full 5 years, which was my proposal, of having Defense separated out from the rest of appropriations, and whatever you did not spend on defense went to reduce the deficit, not somewhere else. We settled for three. And next year we enter the first year when we do not have defense separated out as an isolated budget item.

I have been saying since that time that that was the best thing that ever happened to defense, even in a builddown time. And now I have been saying that, as we enter a bigger transition, it is absolutely imperative that we have more than 1 year of budget numbers, binding, for you to work with.

Now, I understand that your blue ribbon group, headed by Phil Odeen, that task force, among the things they suggested, the one they said was of utmost importance was to have 3-year numbers for defense, rather than 1 year at a time. Although I did not read your testimony, I think you commented on that task force's report. And did you not comment on the multiyear recommendation? Or, if you did not, might I ask you about it now?

Dr. PERRY. I think, Senator, that any business can be run more efficiently and more effectively if it has a longer planning horizon than 1 year. Defense is one of the biggest businesses in the world.

Senator DOMENICI. Right.

Dr. PERRY. As a person responsible for the business management of this operation, I certainly can endorse that it could be run more efficiently and more effectively if we had a longer planning horizon for the resources we are working with. Three years sounds to me to be like about the right amount. That is also the period that Phil Odeen and his panel had.

Senator DOMENICI. Mr. Secretary, might I ask if you think the Secretary of Defense, in his bottom-up review, considers this kind of proposal as part of that review, might we expect the Secretary to have some observations or thoughts or recommendations regarding this, along with what is going to be cut? And, if not, I might want to know what we might do to help that along.

Dr. PERRY. I will be sure that that is considered as one of the elements in the bottom-up review. There will be some consideration given to that.

Senator DOMENICI. Mr. Secretary, I honestly believe there is a latent support around here for that, especially during a rather big builddown. I am prepared, and I think I can get a number of people from the other side of the aisle, including our chairman and people like Senator Nunn and others, to support some change in the budget resolution process to give some multiyear effect to the defense numbers.

But I think we very much need some comment from the administration. And I think the comment would be that it would be much better for the American people who are impacted by the defense builddown to have a better managed builddown. And that is what I understand you are saying when you speak of managing the business part; is that right?

Dr. PERRY. Yes; that is correct.

Senator DOMENICI. Mr. Chairman, am I improperly reading your thoughts on this?

Senator INOUYE. No, no, no; you always read my thoughts correctly, sir.

Senator DOMENICI. Well, I thought you had told me that one time, that you thought my argument was correct, so I used your name.

MEGA-LABS

Mr. Secretary, let us talk for a minute about Phillips Laboratory located at Kirtland Air Force Base, NM, one of the mega-research laboratories of the Air Force. This is their space research laboratory. Are you aware of that?

Dr. PERRY. I am; yes.

Senator DOMENICI. I am concerned because I thought that the long time that was taken in studying the consolidation of the Air Force's science, research, and technology applications was a rather well-studied and serious recommendation. I assume people like you would agree that it was a very good approach to consolidating research, do you not?

Dr. PERRY. Yes; I do.

Senator DOMENICI. Now, let me ask this. I am hearing some rumors that in the bottom-up review there may be some thoughts about changing that concept, such that—and I am not only speaking for Phillips, there are three others I think—that there may be some thought to changing that. Are you able at this point to just talk with the committee about the future of a mega-laboratory like Phillips?

Dr. PERRY. Yes; I am, in the sense that in the bottom-up review everything is on the table.

Senator DOMENICI. That is not very helpful.

Dr. PERRY. I can go further than that.

Senator DOMENICI. Oh, good.

Dr. PERRY. That is just a preface.

The whole theme of the bottom-up review is that with drawdowns deeper than planned, we have to reexamine the whole infrastructure, and that includes the laboratories and the depots and all of the other Government facilities. Specifically, one of the things that will be examined is the whole set of Government laboratories.

I think the spirit in which we are examining that, though, is that the original study which led to the Air Force mega-labs was well conceived and well executed. It may not have gone far enough. We may have to go farther simply because the drawdown is deeper than they were contemplating at that time.

Senator DOMENICI. So is it fair to say that at least you start with the premise that the idea is sound?

Dr. PERRY. Yes.

Senator DOMENICI. And you will end up determining whether the exact parameters and scheduling and the like are still going to be in effect or not? That will be part of this overall review?

Dr. PERRY. It is an issue just like the base closure issue; that the 1993 base closure went far enough for the base force, but it probably did not go far enough for what the force is going to be. By the same token, the lab study went far enough for the budget that was assumed then, but if it was going to be a lesser budget, we have to look at it again.

But I think, as I said, in the spirit, it was in the right direction and the right thrust, and we may have to go farther.

Senator DOMENICI. Might I just ask, as you do this kind of bottom-up review about a mega-laboratory system for the Air Force, since in putting it together it is my understanding that some very competent, if not great, scientists were involved in doing that—in fact, I think the Air Force had a civilian scientist brought on-board for 2 or 3 years just for that effort—I am very proud of it, because it turns out he was from Los Alamos, I believe. He took a leave for 2 or 3 years while he did that.

Are you going to have similar kind of input as you do this bottom-up review of this kind of infrastructure?

Dr. PERRY. No; but the bottom-up review will not be the last word on it. It will simply carve a direction for the new Director of Defense Research and Engineering to proceed. As the DDR&E proceeds, and if they were considering, based on this guidance, further reductions or further changes, then it would be very appropriate, I think, to emulate the outside advisers that we had in the previous study.

That will not be part of the bottom-up review.

Senator DOMENICI. Now, Mr. Secretary, when it comes to infrastructure and research and development, I am fully aware of your description of the "Bottom-Up Review" and your last statement about kind of recommendations that would go to the Secretary. But let me talk a minute about a laboratory system that the Defense Department is not exclusively responsible for, nor the cause of, but that has been substantially the Defense Department's baby. And that is the three defense nuclear laboratories—Livermore, Los Alamos and Sandia. The Department of Energy is operating those partially on behalf of your Department and is primarily responsible for what many think are among the best laboratories in the world.

Dr. PERRY. I would agree with that judgment.

Senator DOMENICI. It seems to me that part of what is happening in a builddown, Mr. Secretary, is the fact that these laboratories are not single purpose and are funded from a multiplicity of sources, but the prime one is DOE with your money. It seems to me it is terribly important in a review process that their future be looked at also, not just from Defense's standpoint, but how can Defense work with others in a dual-use mode and a dual-Government-purpose mode so we do not diminish the strength of the laboratories before we ask them to diversify further?

Dr. PERRY. I think I can assure you, Senator, that that will be done not only because it is a good idea, but because of the particular people that will be primarily involved in that. The Under Secretary of Defense for Acquisition, under whose responsibility this previously came, was the Under Secretary of Energy; and the new Assistant Secretary for Energy, who is primarily responsible for defense matters, has been nominated to be Dr. Reis, who just left the Defense Department as the DDR&E.

So we will have an unusual circumstance of a cross-fertilization of ideas which I think will assure that joint consideration is made. I feel very strongly that those three laboratories are among the crown jewels of the country, and we must find a way of getting the most effective use out of the very great talent we have there. Defense has a substantial interest in the outcome of that.

Senator DOMENICI. Well, Mr. Secretary and Mr. Chairman, I went to New Mexico with the President, and some people saw that in the papers here. We had a lot of fun talking about the fact that he took me there in his airplane, and that that was about the best way I have ever had of traveling to New Mexico. And it was even with a President that I do not agree with on everything, which I told him New Mexicans are going to understand that we do not agree on everything. So they laughed like crazy when I reminded him of that.

But let me tell you, my observation was that the President of the United States is going to be very concerned if the laboratories are dramatically reduced because of defense changes and the nondefense part of Government is not advised and totally understanding of what is happening. If we do what we did this year, 1994, it is very bad, because the rest of the budget did not know what you were doing. So Defense cut the laboratories, but the rest of the budget process did not try to fill in the gaps. And so you have anywhere from a 6- to 10-percent reduction in many of the people, while at the same time we are trying to find out what they ought to be doing in a dual-use civilian sector. And I think you understand that.

And we will be trying to remind the other part of Government and ask the President to remind them that we ought not to be looking at it from one side only and one budget only.

Dr. PERRY. I agree.

Senator DOMENICI. Thank you, Mr. Chairman.

Dr. PERRY. Thank you.

FLEXIBILITY TO DEAL WITH CONTINGENCIES

Senator INOUYE. Mr. Secretary, I would like to just follow up for a brief few moments on Senator Domenici's questions.

There are many weaknesses in the budget and funding process, but I would like to touch on one. I believe this process should give your Office greater flexibility to deal with contingencies. No matter what we say or do, we will be faced with contingencies every year, whether it be Hurricane Andrew or Desert Storm or Somalia, and now Bosnia is looking at us.

The only way that you can deal with this is to reprogram moneys. By reprogramming, the chances are you will not get it restored. So we oftentimes take it out of readiness. We take it out of the Army, Air Force, and Navy, and they have their plans.

I hope we can work together to address this problem on how to provide you with greater flexibility so that as the men at Benning say, "They are going to take it out of our hides." That is one area I hope we can work out.

DEPOT MAINTENANCE WORK

The other one is that I was told that you are considering contracting out all depot maintenance work for weapon systems procured in fiscal year 1994 and thereafter; is that correct?

Dr. PERRY. No.

Senator INOUYE. No?

Dr. PERRY. We are looking extensively at the whole question of what maintenance work should be done in depots and what should be done in private industry. There is a study going on as we speak.

I have no recommendations from that study yet. I would not be surprised if that is the extreme option that is being considered. I would be very surprised if that were the option that anybody would recommend to me.

Senator INOUYE. But you will have greater competition in the depot maintenance work?

Dr. PERRY. I believe not only that, but we will have to have some consolidation. There is just less work of that sort ahead of us.

PEACEKEEPING OPERATIONS CONTINGENCIES

On the first point you raised, Senator Inouye, we do have in the fiscal year 1994 budget request—I forget the exact number—$300 or $400 million, I believe it is, for contingency for peacekeeping operations. That was one attempt to get the kind of flexibility you are talking about.

Second, I would observe that in the reprogramming request for the Somalia operation the sources of funds which we identified were from our investment programs, rather than our operations and maintenance programs. I think both of those are relative to the issues that you raise.

Senator INOUYE. Much of it came out of congressional initiatives, and that gives a lot of us heartburn.

Dr. PERRY. That, too; yes.

Senator INOUYE. So I am certain you realize that.

Dr. PERRY. Yes.

MAINTENANCE FACILITIES

Senator INOUYE. On the matter of competition for depot maintenance workload, some of my colleagues have suggested that our ship and airlift manufacturing industrial base could be preserved by providing private companies with more weapons maintenance workload, which would mean closing up some of the DOD maintenance facilities.

Is that feasible?

Dr. PERRY. It is feasible, and I would expect there will be some shift in that direction. But the exact balance is what is difficult to determine and I do not have a determination of what an appropriate balance on that is.

It is also possible to consider, as we discussed earlier, competition between public and private facilities, although those competitions are very difficult to assess the proper cost basis when you are competing a Government laboratory versus a private one. I have great difficulty with that problem.

Senator INOUYE. Well, Mr. Secretary, I would like to add my voice to the commendations that you have heard all morning. All of us are very fortunate to have you onboard, taking over this difficult assignment. We stand ready to work with you not only to make your job easier, but to enhance the interests of our country.

With that, I would like to, on behalf of the committee, thank you for your testimony this morning. It has been very helpful. And we will be submitting a series of questions, and we hope you can consider them and give us your wise words and responses to them.

We look forward to continuing this dialog with you, because I think it is very important.

ADDITIONAL COMMITTEE QUESTIONS

[CLERK'S NOTE.—Additional questions submitted by subcommittee members, together with the Department's responses, will appear in the appendix portion of the hearings.]

SUBCOMMITTEE RECESS

Senator INOUYE. The subcommittee will stand in recess until 10 a.m., on Wednesday, May 26. At that time, we will receive testimony and space and command and control issues for fiscal year 1994.

Thank you very much.

Dr. PERRY. Thank you, Mr. Chairman.

[Whereupon, at 11:48 a.m., Thursday, May 20, the subcommittee was recessed, to reconvene at 10 a.m., Wednesday, May 26.]

DEPARTMENT OF DEFENSE APPROPRIATIONS FOR FISCAL YEAR 1994

WEDNESDAY, MAY 26, 1993

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 10:05 a.m., in room S–407, the Capitol, Hon. Daniel K. Inouye (chairman) presiding.

Present: Senators Inouye, Bumpers, Stevens, Cochran, and Gramm.

DEPARTMENT OF DEFENSE

SPACE AND COMMAND, CONTROL, COMMUNICATIONS, AND INTELLIGENCE ISSUES

STATEMENT OF HON. THOMAS P. QUINN, DEPUTY ASSISTANT SECRETARY OF DEFENSE (STRATEGIC AND TACTICAL C^3), OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE (COMMAND, CONTROL, COMMUNICATIONS AND INTELLIGENCE)

OPENING STATEMENT OF SENATOR INOUYE

Senator INOUYE. This morning, we continue our review of the fiscal year 1994 budget request by examining space and space-related command, control, and communications programs.

There is little doubt that space systems play an important role in military operations. Operation Desert Storm demonstrated the significant military advantages that space systems provide in critical functions like communications, surveillance, and weather reporting.

Reflecting this importance, the fiscal year 1994 budget request contains $15.1 billion for space-related programs. This amount includes an increase of $700 million above the total appropriated for these activities in the current fiscal year.

This increase stands in sharp contrast to the projected decreases in most other defense spending categories for fiscal year 1994. The Defense Department seeks increased spending for launch vehicle and satellite acquisition and major upgrades in the current launch infrastructure.

Despite the importance of space to military operations, however, the Department bears a heavy burden to demonstrate that all the requested programs and increases are justifiable and affordable.

In the past, this subcommittee has strongly supported major improvements in. U.S. space capability, such as the Milstar strategic and tactical relay communications satellite to the Titan IV heavy-lift launch vehicle.

The subcommittee has pointed out the growing tension between the need to fund enhancements to current systems and the need to develop future systems. It has urged the Defense Department to make the difficult choices to strike an affordable, militarily justifiable balance between these needs.

Military and civilian leaders in the Pentagon have made good-faith effort to come to grips with this dilemma. At a minimum, the costly Milstar constellation will be reduced. However, future fiscal limits may demand more painful choices.

We must hope that the bottom-up review, which is assessing launch programs and infrastructure and military satellite communications will set realistic space program priorities.

This task is made more complex by problems with ongoing programs and by questions about the best ways to manage the acquisition and to command the operations. For example, the operational need for Milstar was disputed when the Air Force recommended termination earlier this year. That recommendation was rejected by the Office of the Secretary of Defense. The bottom-up review is revisiting this issue.

Funding requirements for the Titan IV program still grow due to production slowdowns and a contractor dispute. Furthermore, the program is clearly underfunded according to the Odeen Panel.

The proposal to merge U.S. Space Command into U.S. Strategic Command and to designate the Air Force as primary agent for design, launch, and operation of satellites is controversial.

INTRODUCTION OF WITNESSES

The subcommittee will discuss these and other issues with our witnesses. This morning, we are pleased to have Dr. Thomas P. Quinn, Deputy Assistant Secretary of Defense for Strategic and Tactical C^3 Air Force; Air Force Gen. Charles A. Horner, Commander in Chief, U.S. Space Command; and Maj. Gen. Donald G. Hard, Director of Space Programs Acquisition for the Air Force.

We will hear first from Dr. Quinn, who will be speaking on behalf of both the space and communication components of OSD. General Horner will follow with the CINCS' operational perspective. General Hard will give the Air Force acquisition overview.

The Air Force is already responsible for execution of $4.8 billion of the $15.1 billion Pentagon space budget.

As we all know, we are holding this hearing at the Secret level of classification. The subcommittee and its staff are requested to leave in this room any notes that they may take so that these materials may be stored in secure facilities.

Gentlemen, we have received your full statements and they will be made part of the record.

Before we proceed, may I call upon the vice chairman for any remarks he may wish to make.

Senator STEVENS. Thank you, Mr. Chairman.

I am sad to say that I am going to have to leave this hearing. The Coast Guard informed us last night that they had intercepted the third PRC vessel that had on board driftnets in the North Pacific and we have a hearing before the Commerce Committee on the

Coast Guard this morning, and since we are going to China on Friday, I feel I must pursue that information.

I do have some questions that I would like to submit if I don't get back, but I will do my very best to get back to this meeting.

I am pleased that my good friend from Mississippi is here and I will just leave my questions. We will decide whether to submit them or not based on what Mr. Cortese tells me has been the subject of your questions.

I hope you gentlemen will excuse me.

Senator INOUYE. Senator Cochran.

Senator COCHRAN. Mr. Chairman, I join you and Senator Stevens in welcoming our witnesses this morning. I look forward to their testimony. Thank you.

Senator INOUYE. Thank you.

Dr. Quinn.

Dr. QUINN. Thank you, Mr. Chairman.

I would like to introduce two gentlemen accompanying me here this morning—Dr. Gene Sevin, Director of Missile and Space Systems, who is on my right, and Dr. Gordon Soper, Director of Strategic and Theater Nuclear Forces.

I have a statement for the record to be submitted.

STATEMENT OVERVIEW

Mr. Chairman, members of the committee, it is my privilege to present the Department of Defense budget request for command, control, and communications, or C^3, for fiscal year 1994.

In order to put my testimony in proper perspective, I will first give you a brief overview of the total fiscal year 1994 budget request for command, control, communications, and intelligence programs. I will then provide you with an overview and additional detail concerning the space-related C^3 program.

C^3I encompasses five major mission areas: tactical intelligence and related activities, the National Foreign Intelligence Program, information technology programs to include our corporate information management efforts, the Department's counterintelligence and security countermeasures activities, and our C^3 programs.

When these five areas are combined, the bottom line fiscal year 1994 budget request for C^3I programs totals $53.5 billion.

Within the $53.5 billion, $16 billion is requested in fiscal year 1994 for C^3 programs which fall into the strategic C^3, theater and tactical C^3, and defensewide C^3 mission areas.

The strategic C^3 systems developed and maintained over the past 40 years have been the key ingredient in sustaining the credibility of our nuclear deterrence. These systems are the cornerstones of our future C^3 architectures and they have become even more vital as the number of our weapons and delivery systems continue to decline.

As we look to the future, the threats that we will face are possibly more stressing than ever. Effective warning and assured command and control are necessary to deter the use of not only nuclear weapons but also to serve as a hedge against the emergence of an overwhelming number of conventional threats.

To operate and support needed improvements in our strategic C^3 systems, a total of $5.1 billion is requested in fiscal year 1994.

With this brief introduction, let me now focus on our major space-related activities.

In the area of space C^3, Milstar is the core of the DOD's MILSATCOM architecture. The Milstar system will provide a survivable, jam-resistant, worldwide, and secure communication system to meet the needs of the President and the theater commanders in chief tactical and strategic forces, and other high-priority users in crises and contingency operations.

As for the program's current status, the fiscal year 1993 program was highlighted by the successful Defense Acquisition Board review of the restructured Milstar program.

The approved program includes a four-satellite constellation to provide midlatitude coverage, with incorporation of a medium-data rate payload on satellites No. 3 and beyond. The design work is proceeding on the medium-data rate payload toward a fiscal year 1994 critical design review. Requirements for high-latitude connectivity will be provided by a Milstar polar adjunct program which will be reviewed during fiscal year 1994.

The first Milstar satellite was delivered to the Government in February 1993, and is awaiting Titan Centaur availability to support a scheduled [deleted]. Delivery and launch of satellite No. 2 is planned for [deleted].

The defense satellite communication system [DSCS] is also an integral part of the DOD's MILSATCOM architecture. The DSCS system includes a space segment of five fully capable and several partially capable satellites, a terminal segment of approximately 635 fixed, transportable, and mobile terminals, and a control segment of five fixed DSCS operations control centers.

Today's space segment is a mix of older DSCS II satellites and more capable DSCS III satellites. Eight DSCS III satellites already procured are in storage, awaiting launch when needed. However, based on current projections, replenishment satellites will be required after the year 2000 to continue DSCS or other follow-on service for the future.

Another critical space-based C^3 capability is for the warning and assessment of ballistic missile attack. Today, we have the Defense Support Program, DSP, which has served us well but which has inherent limitations that will require its replacement. The replacement follow-on early warning system [FEWS] system will consist of five satellites in inclined orbits. FEWS will use infrared technology to detect ballistic missiles in boost phase similar to DSP, but it will be more sensitive to allow detection of future tactical ballistic missile threats and will provide more accurate information regarding the origin and destination of ballistic missile launches.

[Deleted.]

Dr. Quinn. In fiscal year 1994, the program will complete its 2-year demonstration/validation phase and is expected to enter the engineering, development and manufacturing phase upon approval of the Defense Acquisition Board in July of next year.

The first launch is scheduled in [deleted] leading to an initial operating capability with three satellites in [deleted] and a full operational capability in [deleted].

The NAVSTAR global positioning system [GPS] is a space-based positioning and navigation system designed to provide worldwide, all-weather, passive, three-dimensional position, velocity and timing data to a variety of U.S. and allied military users. GPS provides a military accuracy of 16 meters and a variable civilian accuracy set to 100 meters in peacetime.

GPS proved to be of enormous military value in Desert Storm in all phases of combat operations, where it was largely responsible for the swiftness and precision of our force movements and for the relative safety with which they were conducted. A constellation of 24 operational NAVSTAR GPS satellites is scheduled for 1994.

In conclusion, I ask for the committee's support of the fiscal year 1994 budget request for C^3 programs. Within the framework of reduced defense spending, we have structured this budget to allow a high degree of responsiveness to regional contingencies, to reflect continuing concerns about proliferation of nuclear weapons, and to address other challenges that we will face in the 1990's and beyond.

The Congress has consistently supported the role of C^3 in our national defense by providing the resources necessary to develop and field critically needed capabilities. We ask for your continued support for the C^3 programs contained in this year's budget. These programs will support the Department's ability to deal with the increasing pace of change and the emerging dangers associated with the national security environment.

Thank you, Mr. Chairman. That completes my statement.

Senator INOUYE. Thank you very much, Dr. Quinn.

[The statement follows:]

STATEMENT OF DR. THOMAS P. QUINN

I. INTRODUCTION

Mr. Chairman and members of the Committee, it is my privilege to present the Department of Defense's (DOD's) fiscal year 1994 budget request for Space and Command, Control, and Communications (C^3) programs.

In order to put my testimony in proper perspective, I will first provide you with an overview of the total fiscal year 1994 budget request for our Command, Control, Communications and Intelligence (C^3I) programs. I will then provide you with detail concerning the budget request for C^3 programs and later focus on our space C^3 programs and issues surrounding our space C^3 systems.

II. FISCAL YEAR 1994 C^3I BUDGET REQUEST

C^3I encompasses five major areas: Tactical Intelligence and Related Activities (TIARA), the National Foreign Intelligence Program (NFIP), information technology programs to include our Corporate Information Management (CIM) efforts, the Department's Counterintelligence and Security Countermeasures (CI&SCM) activities, and our C^3 programs. When these five areas are combined, the bottom-line fiscal year 1994 budget request for C^3I programs totals [deleted].

III. C^3 BUDGET

C^3 programs

The total amount requested for C^3 programs in FY 1994 is $16.0 billion. This amount is $1.5 billion less than presented last year for fiscal year 1994 as part of the fiscal year 1993 Amended Budget Submission. This reduction reflects the restructuring of several C^3 programs in response to programmatic adjustments, changes in the threat to our national security interests, and accelerated reductions to our force structure over the past year. To support this restructuring, the following C^3 programs were significantly scaled-back or deferred in the previous administration's budget proposal:

—E–3 AWACS Modifications,
—Army Data Distribution System,

—Forward Area Air Defense Ground Based Sensor, and
—Tactical Air Control System Improvements.

President Clinton's fiscal year 1994 budget reduces the budget even further by adjusting the following C^3 programs:

—Milstar,
—E–2C Modifications,
—Maneuver Control System,
—Navstar Global Positioning System (GPS), and
—Air Defense C^3.

Even with these programmatic reductions, the fiscal year 1994 budget request still reflects a sound, cohesive overall program for sustaining our current C^3I capabilities. It supports a balanced acquisition program to provide the C^3 capabilities which will be needed in the future.

Major mission areas

The $16.0 billion requested in fiscal year 1994 for C^3 programs may be further divided into the three major C^3 mission areas: Strategic C^3, Theater and Tactical C^3, and Defense-wide C^3.

The strategic C^3 systems developed and maintained over the past forty years have been a key ingredient in sustaining the credibility of our nuclear deterrence. These systems are the cornerstones of our future C^3 architectures, and they become even more vital as the number of weapons and delivery systems continues to decline. As we look to the future, the threats we will face are possibly more stressing than ever. Effective warning and assured command and control are necessary to deter the use of not only nuclear weapons, but also the use of chemical and biological weapons and to serve as a hedge against the emergence of an overwhelming conventional threat. The fiscal year 1994 budget request for our strategic C^3 systems addresses this evolving threat while recognizing the reality that we are going to have to do with less.

The fiscal year 1994 budget request for Strategic C^3 supports improvements to our satellite warning capabilities and our command and control systems for national missile defense. Funding is also requested to support the Secretary of Defense's decision to consolidate airborne command and control operations for strategic nuclear forces with the Navy's E–6A platforms. This capability will enable us to deactivate by 1997, the entire EC–135 fleet which performs communications relay and serves as airborne command posts for the Commanders-in-Chief (CINC's).

The first Milstar communications satellite will be launched this year providing critical, protected communications links that are highly resistant to jamming and nuclear effects for both tactical and strategic forces. With these efforts, we continue to make progress to ensure that our strategic C^3 systems maintain assured command and control of our nuclear forces. A total of $5.1 billion is requested in fiscal year 1994 to improve and to operate our strategic C^3 systems.

Theater and tactical C^3 systems provide military commanders with the facilities and communications equipment necessary for managing conventional forces. The objective of theater and tactical C^3 systems is to ensure secure, survivable, interoperable C^3 systems for joint and combined operations. Continuing the emphasis on strengthening our ability to rapidly respond to regional crises, effective theater and tactical C^3 capabilities are extremely critical especially as the size of the force structure decreases.

Currently, over 50,000 Single Channel Ground and Airborne Radio Systems (SINCGARS) have been delivered to provide the primary means of command and control for combat and fire support units. The Navstar GPS is a highly accurate, space based, all weather, passive, navigation, positioning, and timing system, and is expected to reach full operational capability during fiscal year 1995. The Joint Tactical Information Distribution System (JTIDS) program will provide a high capacity, voice and data, jam-resistant, secure and integrated communications, navigation and identification system for joint air surveillance/defense that is interoperable with NATO. The JTIDS program will continue the production of terminals for the Army, Navy, and Air Force in fiscal year 1994. For these and other theater and tactical C^3 programs, we are requesting $5.5 billion in fiscal year 1994.

The Defense-wide mission area provides long haul and common user communications, base level information infrastructure modernization, support for C^3 mobilization, and national level communications programs. Military satellite communications (MILSATCOM) architectures, standards, spectrum management policy, and the Defense Information System Network (DISN) are also included in this mission area. DISN will provide the global information network and value-added services for national security and defense needs under all conditions in the most efficient manner, while maintaining transparency to its many and diverse users. We are requesting $5.4 billion in fiscal year 1994 for the broad range of communication services provided by defense-wide C^3 systems.

Space C^3

Our forces must be capable of responding with speed and flexibility anywhere in the world where regional threats and conflicts emerge. Space C^3 systems provide an unparalleled capability to support this rapid, global response requirement. They also play a vital and irreplaceable role in maintaining our nuclear deterrence. As we pursue the force reductions and restructuring needed to respond to a new defense strategy, space systems will become even more important to C^3 in the future.

Funding for space C^3 efforts is contained in our Strategic C^3, Theater and Tactical C^3, and Defense-wide C^3 mission areas to reflect the specific missions of each of these areas. The fiscal year 1994 budget request for space C^3 systems reflects a commitment to not only maintaining our current space C^3 capabilities, but also to building toward the space C^3 capabilities needed into the 21st century. The funding profile by fiscal year for space C^3 is shown in the following table:

[In billions of then-year dollars]

	Fiscal year—		
	1992	1993	1994
Space C^3	3.6	3.9	4.0
All other C^3	14.0	12.8	12.0
Total C^3	17.6	16.7	16.0

As indicated, total funding for all C^3 programs Is projected to drop by $1.6 billion or 9% between fiscal year 1992 and fiscal year 1994. If space C^3 systems are excluded, the decline is even more dramatic at 14%, a reflection of the fact that space C^3 is the growth area in the C^3 budget request. This growth is essential to support the advanced technology systems such as the Milstar communications system, the Follow-on Early Warning System (FEWS), and the Navstar GPS, which will provide the communications, early warning, and navigation capabilities for strategic and tactical operations world-wide by our reshaped forces.

I will now discuss the status of our key space C^3 programs and address related space C^3 issues of current interest to the Committee.

IV. KEY SPACE C^3 PROGRAMS AND ISSUES

Milstar satellite communications system

Milstar is the core of the DOD's MILSATCOM architecture and is integrally related to all other military communications satellites, as well as other terrestrial communications systems. The Milstar system will provide a survivable, jam-resistant, world-wide, secure communications system to meet essential communications needs of the President and the theater CINC's, tactical and strategic forces, and other high priority users in crisis and contingency operations.

The fiscal year 1993 program was highlighted by a successful Defense Acquisition Board (DAB) review of the restructured Milstar program. The approved program includes a four satellite constellation to provide mid-latitude coverage, with incorporation of a medium-data rate payload on satellites #3 and beyond. The design work is proceeding on the medium-data rate payload toward an fiscal year 1994 critical design review. Requirements for high latitude connectivity will be provided by a Milstar Polar Adjunct program which will be reviewed during fiscal year 1994. The first Milstar satellite was delivered to the government in February 1993 and is awaiting Titan Centaur availability to support a scheduled [deleted] launch. Delivery and launch of satellite No. 2 is planned for fiscal year 1994.

Let me briefly mention what we're looking at in the Milstar portion of the Department's Bottom-Up Review. We are examining future options to satisfy a range of the Milstar requirements, but at a lower cost. The options all launch the first two Milstar satellites which are already built and then eventually migrate Milstar from its current design to an advanced extremely high frequency (EHF) system that could provide a major portion of the baseline requirements. Future savings would be achieved by reducing weight and manufacturing costs through an aggressive technology insertion program. The difference between the options is in their transition approach to the advanced system and the relative schedule and programmatic risks associated with them. These options are under review, and we expect that the results of that review will provide guidance for the budget process.

Defense satellite communications system (DSCS)

The DSCS is also an integral part of DOD's MILSATCOM architecture. The DSCS system includes a space segment of five fully capable and several partially capable satellites, a terminal segment of approximately 635 fixed, transportable, and mobile terminals, and a control segment of five fixed DSCS Operations Control Centers. Today's space segment is a mix of older DSCS II satellites and more capable DSCS III satellites. Eight DSCS III satellites already procured are in storage and are awaiting launch when needed. Based on current projections, replenishment satellites will be required after the year 2000 to continue DSCS or other follow-on service for the future. These follow-on service alternatives will be addressed during fiscal year 1994 and fiscal year 1995.

Ultra high frequency (UHF) follow-on satellite system

The UHF Follow-on (UFO) satellite constellation will provide replacement satellites for the FLTSAT and LEASAT communications satellites. As the existing constellations reach the end of their expected operational lifetime, UHF satellites will be deployed to maintain worldwide DOD UHF communications capability. A limited EHF anti-jam capability will also be installed commencing with the fourth satellite. The Joint Chiefs of Staff requirement is for nine satellites in orbit. A contract was awarded in July 1988 for the first satellite. Although we did encounter a launch failure in the first satellite in March, we are looking forward to getting on with constellation establishment with a second launch as early as July assuming satisfactory identification and resolution of the Atlas booster malfunction.

Follow-on early warning system (FEWS)

Another critical spaced based C^3 capability is for the warning and assessment of ballistic missile attack. The Defense Support Program (DSP) has served us well, but it has inherent limitations that will require its replacement. The replacement system FEWS will consist of [deleted]. FEWS will use infrared technology to detect ballistic missiles in boost phase similar to DSP, but it will be more sensitive to allow detection of future tactical ballistic missile threats, and will provide more accurate information regarding the origin and destinations of ballistic missile launches. [deleted]. In fiscal year 1994, the program will complete its two year Demonstration/Validation phase and is expected to enter the Engineering Development and Manufacturing phase upon approval of the Defense Acquisition Board (DAB) in July 1994. [Deleted].

Navstar global positioning system (GPS)

Navstar GPS is a space-based positioning and navigation system designed to provide world-wide, all weather, passive, three-dimensional position, velocity and timing data to a variety of US and allied military users. GPS provides a military accuracy of 16 meters and a variable civilian accuracy set to 100 meters in peacetime. GPS proved of enormous military value in Desert Storm in all phases of combat operations where it was largely responsible for the swiftness and precision of our force movements and for the relative safety with which they were conducted. A constellation of 24 operational satellites is scheduled for 1994.

Commercial satellite communications initiative (CSCI)

In fiscal year 1991, the Department completed a review of its MILSATCOM architecture which addressed both long-term goals and near-term constraints, as well as congressional concerns over costs and capabilities. Included was a study addressing the role of commercial satellites in an integrated MILSATCOM architecture. This study recommended the acquisition of bulk commercial SATCOM capacity to form DOD dedicated, fixed and mobile satellite service networks. Separately, the Congress provided funds and directed the Department to contract with several commercial satellite firms to determine how industry might meet current and projected DOD needs. To this end, four contracts were awarded in July, 1992. The products from this competition will define and develop in detail the potential role of commercial satellites in an integrated MILSATCOM architecture.

Although the final study results are not expected until October 1993, there is little doubt at this time that commercial satellites can be used to meet some DOD needs. In fact, the use of commercial satellites is already a part of our satellite communications architecture. The DOD currently uses commercial satellite communications whenever it is cost-effective. The usefulness of commercial satellites was clearly demonstrated in the Mideast War and the CSCI studies have concluded that commercial satellites will have a distinct role in the DOD future. The industry recommendations will provide us with important data to help determine how to supplement military satellite communications, provide surge capacity for contingencies, and exploit the newest commercial service on the most cost-effective basis.

Space launch

Now turning to the space launch area, I would like to address the process we are following to address our future space launch investments, the results of our review on the use of excess ballistic missile assets, and the status of the Space Nuclear Thermal Propulsion program.

As you are aware, the Department is engaged in a number of efforts to support the Secretary's Bottom-up Review of strategy, forces, and budget. The results of this review will be used in the preparation of the fiscal year 1995 through 1999 budget. One area of the Bottom-up Review is space launch acquisition. The purpose of the space launch review is to develop a set of alternative program strategies to satisfy DOD launch needs well into the twenty-first century. We are looking at three primary strategies: first, a life extension program for the current fleet; second, replacing the current fleet with a new system in the 2004 time frame; and third, introduction of advanced technology systems like single-stage-to-orbit.

The life extension considers the implications of maintaining the current fleet for the foreseeable future. Upgrades and improvements that have not previously been considered would be on the table. The second strategy deals with replacement of the current fleet by a new space launch system which might either evolve from today's systems or from a clean-sheet approach, such as envisioned by the Air Force's Spacelifter concept. Some concepts which we originally considered within the advanced technology area that because of schedule, cost, and risk, could be candidates for replacement of current systems in the 2004 time frame. The third strategy, that of advanced technology, looks to "leapfrogging" the current generation of launch technology. This would be the most expensive from a technology readiness and development perspective and also the latest in terms of initial operational capability. Each of these alternatives has a very different effect on the launch industrial base. Whatever direction the DOD takes in the future will need to address the over-capacity of the industry.

We are still in the process of finalizing the results of our review, so I can't provide any detail at this time. However, whatever decisions are made following this review, there will need to be significant investment in our launch systems. In the fiscal year 1994 budget submission we have increased the resources applied to space launch infrastructure to correct the many years of under funding of this critical area.

I would next like to turn to the subject of the use of excess ballistic missile assets. As a result of START reductions, all Minuteman II and Poseidon missiles will be removed from the inventory. START provisions allow for the conversion of these missiles for space launch purposes with restrictions. To assess the use of these missiles to support DOD sub-orbital and orbital requirements, the Department undertook a review of this complex subject over a year ago. In the process of this review, we looked at a number of issues, such as security, technology transfer, economic impact to the commercial launch industry, and START compliance. Throughout the entire review process we had strong industry involvement. We determined that release of these missiles outside the U.S. government would result in an unacceptable risk from a security standpoint, because Minuteman II first and second stages are identical to those of the Minuteman III operational force. The recommended policy dealing with the use of these assets, which was recently approved by the Deputy Secretary, provides blanket approval for the use of these assets for U.S. government sub-orbital use, but requires formal review and approval by the Under Secretaries of Defense for Acquisition and Policy before they can be used for orbital purposes. We expect to forward this policy recommendation to the White House in the near future in accordance with the language in the Senate Report on the National Defense Authorization Act for Fiscal Year 1991 and the direction provided in the President's National Security Policy Directive on Space Launch Strategy, NSPD–4.

Finally, I want to discuss the Department's recent decision relative to the Space Nuclear Thermal Propulsion (SNTP) program. The Appropriations Committee has been very supportive of this technology effort over the last two years. The fiscal year 1994 budget contains no funds to continue a development effort focused on testing a particle bed reactor. This decision was based on our current fiscal situation and the lack of a DOD application at this time. However, the technology is still of interest to DOD. Prior to formally terminating the activity, we proposed to transfer program sponsorship, as well as the authorized fiscal year 1993 funds of $10 million, to the Department of Energy. On April 16, the Secretary of Energy informed us that she declined our offer. As a result, we authorized the Air Force to initiate termination actions. In response to this direction, I understand the Air Force has issued stop work orders. However, the termination action is on hold while we respond to a request from the Defense Subcommittee of the House Appropriations Committee. We are also in the process of finalizing the level of fiscal year 1993 resources required to complete the termination action.

V. CONCLUSION

In conclusion, I ask for the Committee's support of the fiscal year 1994 budget request for space and C^3 programs. Within the framework of reduced defense spending, we have prepared a budget to allow a high degree of responsiveness to regional contingencies, to reflect continuing concerns about proliferation of nuclear weapons, and to address other challenges that we will face in the 1990's and beyond. The Congress has consistently supported the role of C^3 in our national defense by providing the resources necessary to develop and field critically needed capabilities, and we ask for your continued support for the C^3 programs contained in this year's budget. These programs will support the Department's ability to deal with the increasing pace of change and the emerging dangers associated with the new national security environment.

CINCS' OPERATIONAL PERSPECTIVE

STATEMENT OF GEN. CHARLES A. HORNER, USAF, COMMANDER IN CHIEF, NORTH AMERICAN AEROSPACE DEFENSE COMMAND; COMMANDER IN CHIEF, U.S. SPACE COMMAND; AND COMMANDER, AIR FORCE SPACE COMMAND

Senator INOUYE. General Horner.

General HORNER. Thank you very much, Mr. Chairman.

Following Dr. Quinn's statement, I would like to show from the user's standpoint, the battlefield today is characterized by an emerging type of warfare, called information warfare. The factors that make information warfare so important today are the mobility of modern forces, speeds of our operations, needs to minimize casualties on both sides, and coordination of the various air lane and sea forces and also coalition forces.

Space is a primary source of information for the war fighter. We are all aware of weather, navigation, communications, and intelligence. But I think it is also vital as we grow in our understanding of this type of warfare that we keep in mind the need to protect friendly access and exploitation of space and be able to deny the enemy the use of space

Again, Desert Storm, as you know, showed the fundamental nature of space to modern warfare and the increasing importance of it. For SCUD warning, there is no doubt that it was vital far more than I anticipated, certainly for the troops and Patriot, but also for things such as civil defense, which we had tended to overlook in our exercises. That is why I am so interested in the follow-on early warning system [FEWS], because it will give us a capability we did not have in Desert Storm to target the launch sites.

The global positioning system is going to revolutionize warfare, in my mind. It is going to fundamentally change our tactics and our doctrine of forces. It is going to be vital to things like preventing friendly fire incidents and it should provide us much more economical ways of doing business in the battlefield, like guiding weapons to their targets in the weather.

Overhead intelligence is also fundamental to what we do. We are looking to ways to take existing systems and existing information and more fully utilize it. I think that is an area where we can increase the efficiency of our operations. We have done that in Bosnia with drop zones; for example, by taking satellite information and using computers to examine the digital data and producing maps for the drop crews. This gives them GPS coordinates in outlying areas where, because of population density, the slope of the terrain, and vegetation, it would provide the crews good areas to do their drops.

We just fired two HARM missiles at China Lake, where the crews on the F–16 and the A–6, the AVH–6, were provided the targeting information to their HARM missiles from space. The crews themselves were never exposed to tracking from the radar itself. They had two successful firings on threat radars where they did not have to expose the aircraft, the firing aircraft, to receiving the signal and, therefore, being subjected to the threat.

I think that our warfighters need to more fully understand space and fully exploit the capabilities it provides.

On a personal note, I would like to thank the chairman and Senator Stevens for the visit you gave the troops during Desert Storm, and thank all the committee for the way you have supported our men and women in the Armed Forces.

Thank you very much.

Senator INOUYE. Thank you very much, General.

[The statement follows:]

STATEMENT OF GEN. CHARLES A. HORNER

INTRODUCTION

Mr. Chairman, distinguished members of the committee, I very much appreciate the opportunity to address this committee today as the Commander in Chief (CINC) of North American Aerospace Defense Command (NORAD) and United States Space Command (USSPACECOM), and the Commander of Air Force Space Command (AFSPACECOM).

These three highly interdependent commands are combined at my level to assure integrated support to the national command authorities of Canada and the United States, as well as unified and specified warfighting commanders. I will testify in all three capacities to give you the most accurate perspective of my responsibilities, capabilities, and requirements.

First, I will emphasize the two primary messages of my testimony: the necessity for a ballistic missile defense (BMD) system—a system that will best protect deployed forces, as well as North American borders, by pushing the intercept envelope out over enemy territory and forces. As Joint Force Air Component Commander (JFACC) during Desert Storm, I became thoroughly familiar with the revolutionary contributions space exploitation made to our warfighting experience.

The number one lesson learned I took from Desert Storm was that we must develop a ballistic missile defense system capable of directly supporting deployed forces from ballistic missile attack. As the potential for international proliferation of long-range missiles and weapons of mass destruction escalates, a ballistic missile defense system will provide the political and military leverage critical to limiting sources of regional instability and to confining violence should conflict occur.

My second key point is the national imperative for an upgraded medium lift space launch capability. Our heavy lift needs can be met by Shuttle and Titan. Light lift requirements will be satisfied by Pegasus and Taurus. This, however, constitutes only 18 percent of our space lift requirements—with the remaining 82 percent underscoring the demand for an affordable, internationally competitive, and militarily responsive medium lift capability.

Next, as CINCNORAD, I will discuss the enduring role of the binational command specifically tasked with defending our single most important military theater, North America. This mission includes safeguarding the air sovereignty of North America, as well as the function of detecting and assessing possible threat events, and warning the national command authorities of Canada and the United States of possible attack.

Finally, in my capacity as USCINCSPACE, I will discuss the vital and maturing mission for space in support of the warfighter. This will include a review of USSPACECOM's singular responsibility for ensuring the United States has continuous access to and use of space and our role in enhancing land, sea, and air operations through space support to the warfighter.

STRATEGIC ENVIRONMENT

We are living in times of rapid international change. A time where the outcome of complex diplomatic and military dynamics has become more difficult to predict. The threat of global nuclear war is abating and a new, dynamic, but less stable multi-polar world is emerging. The historical events within the former Soviet Union and Warsaw Pact have served as the catalyst for a strategic reassessment, and the National Military Strategy articulates this new focus.

We are moving away from military preparations for global nuclear conflict to the mission of manning, equipping, and training for regional, or theater contingencies. But, this new strategy is predicated on key conditions we expect to endure. As stated in our National Military Strategy, we expect the United States:

—Will continue to be a superpower;

—Will continue to face a capable, although diminished nuclear threat;

—Will encounter challenges to both overseas regional stability, and the sovereignty of our airspace;

—Will face numerous, and potentially dangerous, uncertainties associated with a world in transition; and

—Will stress regional alliances and coalition warfare, when it is in our manifest best interests.

Within the context of these enduring conditions, as a nation we are searching for the correct formula to reduce our military commitments and the corresponding defense budget demands. Yet even as we struggle to find smart ways to effect change, we are confronted by the paradox of a world community that perceives the U.S. as an honest broker, and places increasing demands on us for global intervention and military leadership. Therefore, as we seek to satisfy our new national defense requirements at a lower cost, we must not forfeit our position of world leadership and technological superiority.

BALLISTIC MISSILE DEFENSE CHALLENGE

I am aware that the continuing need for ITW/AA may be a tough sell. I know that, despite what are for me still vivid memories of Scud missile attacks during Desert Storm, Americans may have grown insensitive to an expanding ballistic missile threat. But the facts are that, while North America is arguably less threatened by nuclear attack for the next few years, deployed military forces and U.S. national interests abroad face a significantly increased danger of ballistic missile attack.

This brings me to my first primary message—America must have an integrated ballistic missile defense system.

Ballistic missile proliferation

As the world moves away from the bipolar rivalry of two superpowers, we watch nations who were once restrained by political ties to a superpower acquire weapons of modest sophistication and great destructive power. As I speak today, more than 20 nations either control or seek short or medium-range ballistic missiles. These nations appear convinced that the development, procurement, and deployment of ballistic missiles—possibly armed with nuclear, biological or chemical warheads—are the means of enhancing their national strength, prestige, and international influence. They believe ballistic missiles provide significant political and military leverage. There is some truth to this logic.

CNN pictures of Iraqi Scud attacks were graphic. Night after night the world watched as Scud missiles were continually shot down—not over Iraq, but over their intended targets: coalition forces, Saudi Arabia, Bahrain, as well as Israel. Iraqi Scuds were a terror weapon and carried fear of nuclear, biological, or chemical warheads—precipitating genuine anxiety across the middle east. In most every home in Tel Aviv and Riyadh there was at least one sealed room. No one worked, ate, or even slept without a gas mask at the ready. Israeli leadership earnestly debated every conceivable political and military course of action.

As JFACC, I was also affected by these crude missiles. My staff was compelled to estimate the impact of moving our single most important air asset, the E-3 AWACS, beyond Scud range—a move that would require an additional three hours of aircraft transit time to and from the Kuwaiti theater.

And what if Iraq had placed biological or chemical materials in the nose of the missiles, and the terminal phase Patriot missile system had intercepted one of these missiles over Tel Aviv or Riyadh? . . . A likely result would have Israel entering the war, thousands of lives lost, and key air operations shut down for days, maybe weeks.

Today, the ballistic missile challenge is growing. Nations such as North Korea, China, and Russia are exhibiting a willingness, if not an eagerness, to sell ballistic missile production technology and the missiles themselves in the international marketplace.

The Russian economy is deteriorating. The remaining CIS republics face equally staggering economies. As a consequence, the opportunity for huge profits from the sale of missiles and military hardware and the lure of a meaningful increase in wages for the tens of thousands of former Soviet scientists being offered more lucrative jobs abroad may result in a growing transfer of sensitive weapons technology. This very real economic hardship, a condition sure to persist until the CIS is able to achieve significant progress, leads to an incentive to sell military hardware, ballistic missiles, and sensitive weapons technology.

Presented with the potential abundant availability of "cheap" technical expertise on the world market, nations who can afford to develop their own missile infrastructure or buy their own missiles will not buy crude short-range missile systems like Scuds. Rather, they will either purchase or build their own sophisticated longer-range systems. Consequently, we anticipate the threat based upon longer range systems armed with warheads of mass destruction.

The growing ballistic missile challenge must serve as a catalyst for articulating a meaningful BMD strategy. A strategy carefully constructed so it:

—Reflects political guidance;
—Confronts the military challenges;
—Utilizes only those national resources consistent with domestic and global priorities; and, most importantly,
—Delivers results in a time frame the American public can support.

BMD systems integration

Ballistic missile warning.—During Desert Storm, U.S. Space Command assets detected, evaluated and warned Central Command forces of Scud launches within a matter of minutes. This theater-wide detection of Iraqi Scud missile attacks in the Persian Gulf was a product of the Defense Support Program, or DSP satellite. Designed in the early 1970s, solely to provide warning of a Soviet ICBM attack against North America, DSP underwent unprecedented and innovative operational and systems software modifications. These modifications made it possible to furnish coalition forces with timely, unambiguous warning of Scud missile attacks.

However there are inherent limitations in a system designed for a singularly distinctive twenty year old mission. The modified DSP functioned near the limits of upgraded design capability throughout the Gulf War, and benefitted from exceptionally unique and favorable geographic, weather, and operational conditions . . . conditions that are unlikely to be duplicated in any future conflict. Future commanders must have the improved capability of a more responsive early warning satellite that provides worldwide coverage for any regional conflict.

In my position as CINCSPACE, fielding the Follow-On Early Warning System (FEWS) is my number one priority. Designed to offset the recognized deficiencies of DSP, FEWS is ten months into its 24 month demonstration and validation phase of development. When its full operational design capability is realized, including onboard processing ability, FEWS will have the capacity to: promptly detect a larger inventory of ballistic missile launches; dramatically improve isolation of ballistic missile launchers and the threatened impact area; and relay data directly to theater forces in real time. FEWS will ensure U.S. and allied forces continue to benefit from prompt and precise ballistic missile launch detection and warning.

Ballistic missile interceptors

Given that we could not stop all Scud launches, the weak link in the BMD equation was our inability to intercept these missiles earlier in their flight trajectory. If we owned such an intercept system, we could have pushed the intercept envelope out over Iraq, rather than over friendly forces and civilian population areas. Thereby, raising the question of just how eager Saddam Hussein, or the Iraqi people, would have been to launch more than 80 Scud missiles if intercept would have occurred over Iraqi forces and territory.

Ballistic missile intercept programs are lagging far behind our missile detection and warning systems. Detecting ballistic missiles at launch, and tracking them over thousands of miles, does us little good if intercept occurs only five miles above the designated impact point. This legitimate concern is made even more worrisome when we hear the former Chief of Armed Forces for one third world country state:

That [the number one lesson learned from Desert storm is], "Never fight the Americans without nuclear weapons."

The proliferation of technical expertise in building longer range systems, into the hands of less restrained political leadership, could pose a significantly more lethal and accurate danger in the near term to deployed forces and in the future the continental United States. A more farsighted vision of ballistic missile defense points to development of a ballistic missile interceptor capable of intercepting the full inventory of ballistic missiles in a manner preventing portions of a ballistic missile or its warhead—which in the future may be carrying weapons of mass destruction—from striking the intended military or civilian target area. We must focus the development of our ballistic missile interceptors to push the intercept envelope beyond the defended territory.

I support the current direction to focus first on Theater Missile Defense, then national defense, while pursuing technological development of advanced systems. Eventually these systems could be integrated into a missile defense system including a space-based detection, warning, cuing system coupled with advanced interceptors. As the threat from the proliferation of long-range missiles increases, the validity of an integrated ballistic missile defense system will be realized in the added security from missile attack it would provide.

Shared ballistic missile warning

A fully integrated and deployed BMD system is not, however, the singular answer to the ballistic missile threat. The United States must seize the opportunity, and take the moral high ground in nuclear disarmament. One avenue to effect this may be in the shared ballistic missile warning arena.

A U.S. proposal for international ballistic missile early warning center where attack information is shared among participating nations, was initiated primarily as a trust building enterprise between the United States and Russia. Since the June 1992 summit between Presidents Bush and Yeltsin, an increasing number of nations have inquired about inclusion in a shared ballistic missile warning program.

As I have previously stated, deterrence is ineffective against volatile international decision makers. Limited nuclear war against these potential antagonists is militarily impractical and internationally unacceptable. An argument can also be made that in this unrestrained multi-polar environment, nuclear weapons owned by a growing number of nations all too ready to employ them are now destabilizing. Therefore, we might consider eventual nuclear disarmament as a condition for inclusion in the shared BMD protection program.

The logic is sound: it doesn't make sense to require prior notification of pending ballistic missile attack by one participant against another coalition partner; and it would serve as a meaningful deterrent to non-participants by prompting any attacking nation to re-examine the consequences of an unsuccessful ballistic missile attack on a protected member—a virtual reality when an integrated BMD system is deployed.

Together, shared warning of ballistic missile attack and an integrated BMD system address the number one military threat of the future—ballistic missiles. The armed forces of the future will be called on to meet the challenges of conventional warfare contingency operations.

We must be ready to rapidly deploy these highly skilled conventional forces and high-tech weapons anywhere in the world on very short notice; and we must be able to defend them, as well as North America, from the growing threat of international ballistic missile proliferation. If we are to successfully accomplish this, we must fund the weapons systems of the future.

LAUNCH

My second primary message, and my number one concern as Commander AFSPACECOM, is launch. Historically, when we decided to contract the Space Shuttle as our sole space lift vehicle, we all but eliminated funding for expendable launch vehicles (ELVs) and severely reduced funding for maintenance of non-shuttle launch sites. After the Shuttle disaster we were compelled to reassess the launch vehicle decision, upgrade 60s and 70s generation launch vehicles, and play catch-up to renovate neglected launch sites and infrastructures.

Today, the market for launch is reaching a plateau, and America is being challenged by the influx of very competitive, often government subsidized, international launchers. Therefore, simply as a matter of survival, the Air Force, civil, and commercial space industries must work cooperatively to reduce the cost of the U.S. launch process.

A 1992 Space News article cited that eighty-two percent of all 1992 commercial Space payloads were manufactured in the United States. The same article went on to say that only twenty-seven percent of these payloads were contracted for launch on U.S. manufactured boosters. As the French, Chinese, Russians and others expand their competitively priced launch market, this trend will only get worse.

As more and more payloads go to foreign launchers, simple economies of scale tell you that our few remaining launchers will become more costly. One major contributing cause may be that space transportation has evolved as a means unto itself, rather than the means to an end.

Launch must be viewed as a process. Payloads should be delivered ready for marriage to the booster; the booster and payload then delivered as one unit to the pad—thereby limiting the time-span that launch pads are tied up for any one launch; sergeants would man both launch and satellite control stations—seats now occupied by highly skilled engineers; and these same sergeants would then employ tried and tested checklist procedures to ensure the safety of the entire process.

Any worthwhile change in launch philosophy will also dictate a fundamental shift in the existing satellite design mindset. The truth is, where we can, we need to move away from one-of-a kind satellites—satellites requiring unique control networks and extensive modifications to designated launch boosters toward satellite payloads based on customer defined mission requirements, launched with minimal modification on standard boosters, and controlled through existing networks.

Once this shift in mindset has been effected, it is absolutely crucial that the U.S. space launch industry evolve from the mid 70's technology of our current ELVs to brave the space launch challenges of the 21st Century. Accomplishing this will dictate that a constancy of purpose and clarity of language be employed in the articulation of requirements for, and design of, the future launch system.

The motivation for developing a new spacelift system is not new. It is the same stimulus that was behind space Shuttle and, more recently, the National Launch System (NLS)—to make U.S. launch systems more affordable, efficient, flexible, and responsive. The Shuttle was a revolutionary attempt to radically reduce launch costs by returning the booster to earth for rapid refurbishment and reuse. Although a technological triumph, Shuttle never achieved its ambitious low cost goals. NLS, on the other hand, while capturing the correct tenets, fell victim to a lack of distinct focus by attempting to be all things to all people.

We need to possess a 21st Century, medium lift launch vehicle that is affordable, internationally competitive, and responsive to military launch demands. There is nothing contentious, mysterious, or technically out of reach about what we need to do to produce such a vehicle. The inexorable relationship between the civil, commercial, and military launch communities must mature. Mutual cooperation must exist if we are to exploit the economies of scale that can only be achieved through a full joint partnership between all facets of this U.S. space launch establishment.

The American launch community must forge a coalition between the government and commercial vendors that will be cost effective and help stimulate our economy. Forging this coalition will require a strong national commitment, but it is consistent with the President's stated goal of capitalizing on our commercial strengths to create new jobs in the world market. There is the added benefit that, with a proper focus, we can also evolve this concept in the future to meet all our requirements.

Our preeminence in space technology has the potential to provide the key to commercial competitiveness in a world market demanding economical access to space and its advantages. But, unless we change the way we design and launch satellites we will face escalating launch costs which will inhibit military access to space and could handicap our commercial vendors from becoming internationally competitive. Eventually this will result in the loss of high-tech jobs in critical career fields.

NORAD

Canada and the United States share the longest undefended border in the world. For more than three decades we have capitalized on this unique trust by combining our military strengths to promote an unprecedented and cost-effective binational partnership, the North American Aerospace Defense Command, NORAD. Throughout the Cold War, NORAD served as our primary agency to warn of and defend against an attack on North America. The demise of the Soviet Union and Warsaw Pact has mandated a joint U.S./Canadian review of NORAD mission priorities and force structure requirements.

In 1991, NORAD initiated a top to bottom self-examination addressing two fundamental questions: Was there a continuing need for NORAD; and if there was, what adjustments were necessary to best tailor the command to meet contemporary challenges? The results of the year-long study show that NORAD's missions of safeguarding North American Air Sovereignty, contributing to deterrence by providing warning of attack, and response should deterrence fail, remain essential keys of the national security needs of Canada and the United States.

While confirming the continuing role of NORAD, the review also highlighted areas of NORAD's organization and force structure which could be better focused to accommodate the changing geopolitical environment. Our close relationship and collocation with USSPACECOM has afforded NORAD an opportunity to reduce manpower and overhead costs by combining those elements of both staffs which were performing common support functions, and by consolidating two previously separate command centers. Further significant savings could be realized by consolidating some NORAD Sector Operations Centers—but real progress in this regard is, to an extent, dependent on improved data fusion and communications capabilities of remaining operational centers. We are continuing to study options for further organizational realignment while preserving those benefits we gain from retaining NORAD's unique identity as a separate and distinct binational command.

Air sovereignty

In conjunction with streamlining the organization, we have also begun modifying NORAD's operational philosophy and force structure. As the threat of a massive nuclear attack from the Soviet Union fades, we are thoroughly reexamining NORAD requirements and deleting those which are no longer applicable in today's world. We are pursuing a number of initiatives to reduce back-up command, control, and communications systems; as well as updating our command priorities list to address specific capabilities we must have to meet the evolving threat. This revised priority list is designed to clarify NORAD's mission needs to American and Canadian defense establishments, and assist supporting commands in their associated review of mission essential force structures. We will continue to deploy and upgrade those systems vital to mission accomplishment even as we pursue the cost benefits of reduced operations tempo, as allowed by the threat. It is NORAD's goal to significantly reduce O&M costs of operational systems, while retaining the infrastructure necessary to reconstitute a more robust air defense posture as necessary.

Within the current national security environment, NORAD's principal mission has become the peacetime surveillance and control of sovereign North American airspace. The ability of NORAD to accomplish this mission is tested on a daily basis, by those who would most profit from unrestricted entry to North America. During 1992, our systems detected nearly eight hundred unidentified targets transiting the approaches of our borders. Today, we are exploring several concepts of operation designed to optimize the flexibility and employment of our air sovereignty forces. Although-the number of CIS aircraft probing these approaches has dropped significantly, increasing numbers of well-equipped aerial drug traffickers from the south underscore the continuing demand for an air sovereignty force posture with specialized training and equipment. The air sovereignty role of NORAD preserves our capability to detect, track, and identify those who seek to transit North American airspace.

Integrated tactical warning and attack assessment

There is an abiding ITW/AA mission for NORAD. For those who might be skeptical, I can frame the picture of an evolving geopolitical environment with an inherent strategic military threat.

The collapse of the Soviet Union has radically altered the international landscape. Old truths that guided our national security policy since World War II are disappearing as the forces of real reform establish themselves in the Commonwealth of Independent States (CIS). Today, the newly formed republics have neither the political desire nor the military infrastructure to pose the same threat to North American security as did the Soviet Union for so many decades. Nevertheless, there is a residual nuclear capability retained within the CIS.

In the euphoria of our hard-earned victory in the Cold War, we dare not assume away some 27,000 nuclear weapons dispersed throughout the CIS—a condition exacerbated by the continuing power struggle over command and control authority. Nor should we become myopic regarding the expanding sphere of nations seeking nuclear technology which, if left unchecked, will surely present new challenges. In fact, the potential proliferation of nuclear weapons and sensitive weapons technology may well pose a bigger challenge to the ITW/AA mission of NORAD than did the monolithic Soviet Union.

The Soviet Union and U.S. have a shared mutual acceptance of nuclear retaliation as a deterrent. This concept of nuclear deterrence between superpowers is not likely to serve us as favorably in a multi-polar world whose population includes more volatile political leadership, such as we see in Iraq. Therefore, despite the easing of the nuclear superpower confrontation, we must continue to be realistic in our acknowledgement of both the surviving and the evolving nuclear danger. Evaluation of possible military threats must continue to be predicated on the warfighting capabilities of a potential adversary, not on their current stated intentions.

NORAD has been performing the vital mission of ITW/AA for 35 years, and there is a continuing mission requirement for ITW/AA into the foreseeable future. Consequently, NORAD continues to monitor all remaining and emerging nuclear capable forces, assess significant events, and warn national command authorities should threatening activity of any kind be detected.

U.S. SPACE EXPLOITATION

I would now like to shift the focus to space exploitation. My thesis is straightforward: Space has come of age. Over the years, Congress has solicited the views of many witnesses on both sides of the issue of militarizing space—and please make no mistake, that is the real issue here, not as some argue, weapons in space. You have heard from those who assert that space is, and must remain, a pristine environment unspoiled by the presence of military systems. You have also heard from those who contend that space is the ultimate military high ground—a theater of operations we can ill-afford to yield to any potential adversary.

Addressing the first point, space is being used today for military purposes, and its use has been on the increase since it was first transited by Germany's V–2 short-range ballistic missile. On the second point, space is a realm in which many military operations are conducted more efficiently than by terrestrial systems. Military satellites have been Operating in space for more than twenty years, and our accomplishments in Desert Storm emphasize that space has unquestionably evolved as a military theater of operations.

We should also keep things in a nonemotional perspective. We place systems in space, not "because it's there." Rather, we place systems in space only when it makes clear compelling sense to do so and only when it is in the best interests of the nation. We work to ensure that military space systems, space infrastructures, and space institutions do not exist for themselves. Rather, all exist to assure U.S. and allied warfighting forces are able to fight and win on the ground, at sea, and in the air.

But, U.S. space exploitation is at a turning point. A turning point posing distinctive challenges for the 90's and the dawning 21st Century. These challenges will tax future space force planning and budget appropriations processes. Nevertheless, the realistic bottom line is: The U.S. military operates in space, and since it is neither militarily nor fiscally responsible to reduce our emphasis on space we must work together to identify, develop, and fund the most cost-effective space force structure to meet future national security requirements.

GLOBAL SPACE EXPLOITATION

Our integrated use of space-based systems in support of the coalition forces during Desert Storm elevated the world preeminent status of U.S. military space exploitation capability. In fact, space is now so integral to joint and combined military operations that were we to remove space assets from our military arsenal, as a nation we would be relegated to employing warfighting tactics much like those of WW II.

But we are not the only nation learning lessons from Desert Storm. Other countries are no longer content to stand on the sidelines and admire our military prowess in space. Every audience I address, military or civilian, U.S. or international, recognizes that space forces are critical to victory in modern warfare.

Some nations already boast a vast array of space systems. Russia, as an example, continues to operate the former Soviet space surveillance order of battle . . . a highly formidable space force structure which continues to directly support reconnaissance of U.S. and allied forces. We expect this force structure to remain robust in the years ahead.

Other nations, those currently lacking space-based assets, are actively developing strategies for space. These strategies call for either procuring space-based systems or purchasing space originated data to accomplish civilian and military goals.

With space and space products accessible to anyone with the financial capital to purchase them, a nation or group of individuals no longer has to build and launch their own satellites to have access to space support. Today, approximately 25 countries and/or international organizations own or control satellite payloads. By the end of the century this number is expected to increase to almost 40. This growing transfer of critical space technology, whether through international joint ventures and space consortia or purchase on the open market, is certain to have a far reaching impact on all future military operations.

Tomorrow's national military strategy must fundamentally accept that potential adversaries with the capabilities to do so will conduct military hostilities beyond the terrestrial arena, and into the limits of space. This could profoundly influence the course and outcome of conflict on land, at sea, and in the air.

Space support to the warfighter

During Desert Storm, and currently during Restore Hope, space systems have been instrumental to the mission accomplishment of theater forces. Integrating space systems into unified command military planning has been spearheaded by U.S. Space Command, and utilizing theater commander feedback, we continue to work to make space systems data more accessible and user-friendly to theater commanders and forces.

In today's joint warfighting architecture, space systems:

—Provide theater commanders, as well as the national command authorities of Canada and the United States, surveillance and warning of possible ballistic missile threats; and,

—Provide space force enhancement support directly to the warfighter in military operations. This comes in the form of navigation, communications, surveillance, tactical warning and attack assessment, and environmental monitoring. As a result of our joint service space education efforts, the demand for space-originated products grows daily.

Navigation

During Desert Storm we used the Global Positioning System (GPS) to solve the soldiers' most flagging battlefield problem . . . Where am I? So accurate and popular were GPS receivers that when government supplies were exhausted, parents were buying them commercially for their service sons and daughters.

With round-the-clock transmissions of real-time navigation data, GPS proved absolutely indispensable in the featureless sands of Saudi Arabia. In addition to being hand-carried by ground forces to negotiate minefields and find mobile kitchens for meals, we put them on tanks, high-speed reconnaissance vehicles, supply trucks, ships, and on the glareshields of precision strike aircraft. While Iraqi forces were confined to charted roads and trails, coalition forces had the run of the field. If you moved, or were in anything that moved in the theater, you wanted GPS with you.

But, the big pay-off in GPS is not on orbit. It lies in our full integration, training, and use of this highly precise technique of maneuvering forces during combat. During Desert Storm, we watched as GPS revolutionized modern warfare by diminishing the fog of war—making every aircraft, vehicle, and service member count; providing each individual soldier, airman, and sailor the ability to maneuver, engage, and evade the enemy with tremendous accuracy and efficiency; and by redefining the phrase "precision targeting."

Of particular concern, however, is that GPS satellite is receivers are commercially available in large numbers to anyone with the means to purchase them. For this reason the "selected availability feature" was designed. This militarily controlled function, when activated, denies the most precise system data to unauthorized users. Space Command actively supports the acquisition of selective availability feature capable receivers, and we further advocate a national policy preserving this highly precise GPS data exclusively for authorized users.

Satellite communications

Any officer with more than a month in uniform understands that the single most important requirement of the battlefield commander is assured communications. In Desert Storm, more than ninety percent of all our communication traffic was transmitted into and out of the theater via communication satellites (COMSATs).

There are four branches to the military satellite communication (MILSATCOM) architecture. First—UHF COMSATs were, and continue to be, the workhorse for tactical ground, sea, and air forces. With the UHF Follow-On we will ensure that the small light-weight terminals, those that can be rapidly deployed to provide secure and reliable theater communications, will always be available to the warfighting commanders.

The second branch of the MILSATCOM architecture is the Defense Satellite Communications System, DSCS, which initially provided seventy-five percent of all inter-theater connectivity. This system was used extensively to support intra-theater requirements covering deployment of forces across long distances not supportable by terrestrial systems. But, current DSCS fixed ground terminal equipment is 1970s technology and has exceeded its designed life cycle—with many DSCS components and repair parts no longer being manufactured. Scheduled modernization of the

DSCS terminal with state-of-the-art technology, thereby extending the DSCS life cycle an additional 15 years, will be accomplished in the heavy and medium terminal package of the DSCS upgrade program. Today, and in the future, DSCS will continue to meet the majority of our medium and high data rate communications requirements.

MILSTAR, the new military owned and operated COMSAT, will soon be integrated as the third branch of the MILSATCOM architecture. MILSTAR is equipped with on-board computer processing and satellite-to-satellite crosslink communications capability. It will provide worldwide, secure, jam-resistant command and control communications to civilian and military leadership. MILSTAR will ensure that critical command and control connectivity is maintained through all levels of conflict. There is no other communications satellite that will serve our nation's future warfighting needs better than MILSTAR.

U.S. SPACE Command fully supports the UHF Follow-On, DSCS III, and M!LSTAR programs. Having said that, I must point out that even with scheduled upgrades to UHF and DSCS COMSATs, as well as the fielding of the MILSTAR constellation, our future warfighting communications demands cannot be met solely by military COMSATs—nor do they need to be for the nonsecure, administrative traffic that doesn't require assured connectivity. Therefore, I must express my strong support for the commercial SATCOM initiative, the fourth branch of the MILSATCOM architecture. Through mutually beneficial efforts such as this, a combined effort of the commercial industry and department of defense to integrate commercial COMSAT support, the American taxpayer is assured the best possible support to the warfighter at the most economical price.

Satellite imagery

Other than communications, there are few requirements more urgent to a warfighting commander than knowing the enemy's strength and deployment. In satisfying this crucial tactical requirement during Desert Storm, the military utility of Multi-Spectral Imaging (MSI) satellites was conclusively demonstrated. MSI's worth was first realized when we were forced to deploy U.S. forces to the Kuwaiti theater with many maps 10 to 30 years old. To correct this deficiency, MSI satellite systems were used to image the theater, after which GPS and other positioning data were integrated, and the resulting imagery was used to prepare new map products and map updates.

An additional, and strategic specialty of MSI is its capability to depict potential military obstacles beyond human visual detection. Bathymetry data was used by the Navy/Marine Corps team in planning amphibious operations, and MSI products also identified numerous terrain trafficability features—to include natural subterranean hazards having the potential of literally bogging down an entire advancing military column.

But, perhaps the most important product of MSI was the ability to ascertain Iraqi command and control positions and troop movement knowledge. Subsequent planning and execution of strike maneuvers, including the famous "left-hook," were essentially dependent on MSI data provided by the combination of U.S. LANDSAT spacecraft and the French SPOT satellite. The planned DOD/NASA LANDSAT 7 system will improve our MSI capabilities and provide crucial support to the warfighter into the next century.

Weather

Accurate weather prediction is absolutely vital to modern warfare, and the Defense Meteorological Satellite Program (DMSP) was tasked with meeting the crucial military requirement for up-to-date environmental information in the Kuwaiti theater of operations. Employing these satellites; military forecasters located, identified, tracked, and analyzed the intensity of severe weather phenomena such as sandstorms, thunderstorms, and extensive cloud coverage.

More importantly, DMSP produced three-dimensional cloud analysis, forming the basis for computer forecast models to meet the unique military requirements of launch, transit, targeting, and recovery operations of air strike missions. But once again it must be stated, many field units and ships did not have total access to DMSP data because of a shortage of small tactical DMSP reception terminals . . . a shortfall we must work to rectify.

FUTURE SPACE PROGRAMS

Today, USSPACECOM is coordinating numerous component command space support to the warfighter initiatives. Together, we are actively pursuing impressive and wide-ranging ventures having the potential to enhance theater ballistic missile defense efforts, as well as putting space directly into the foxhole, cockpit, or combat information center in real time.

As I previously discussed, Desert Storm, even though it occurred in an environment conducive for DSP performance, stressed the limits of DSP to detect and report Scud missile launches. The Follow-On Early Warning System (FEWS) has been specifically designed to support theater commanders in adverse environmental conditions. FEWS, while fully funded, will not be on orbit until after the turn of the century. Therefore, we must provide improved capabilities through existing systems.

USSPACECOM has aggressively pursued a healthy on-orbit DSP force structure to meet the requirement for both strategic and theater ballistic missile launch detection and warning. Innovative processing initiatives from the Army, Navy, and Air Force continue to push the technical limits of DSP and other programs.

The Army's Tactical Surveillance Demonstration (TSD) has been designed to provide deployable, in-theater processing capabilities using state of the art hardware and software. This advanced system uses data from two DSP satellites to provide improved launch point location, time, and bearing (azimuth) information. TSD is currently undergoing tactical utility assessment with operational theater forces. USSPACECOM is reviewing the cooperative Army and Navy program using a ruggedized version of TSD, called the Joint Tactical Ground Station (JTAGS).

Concurrently the Navy has pursued the RADIANT IVORY initiative which uses DSP data in combination with a national sensor to provide improved theater missile defense parameters. RADIANT IVORY's approach emphasizes exploitation of existing national sensors and DSP, rather than requiring the development of costly new systems.

Capitalizing on the improved capabilities demonstrated with RADIANT IVORY, the Air Force's TALON SHIELD program will use multiple national and DSP sensors to increase the situational awareness—thereby improving both the probability of detection and the accuracy of missile launch parameters.

While providing improved processing on a limited portion of the earth's surface, these systems in no way mitigate the inherent limitations of the DSP sensor. Consequently, while they cannot replace the world-wide capabilities of FEWS, they do possess the potential to improve our near term ability to provide timely launch warning information, radar cuing parameters, and the location of mobile missile launchers for rapid counterstrike.

In addition to the requirement for improved detection of theater ballistic missiles, there exists the necessity for improved dissemination of this critical warning and cuing data to theater forces. During Desert Storm, Tactical Event Reporting System (TERS) data was transmitted via the Tactical and Related Applications Program (TRAP) broadcast system. Since Desert Storm, a more robust and timely TRAP network architecture has been designed, and USSPACECOM is exploring other formats and architectures in order to transmit TERS data on the Tactical Information Broadcast Service (TIBS).

Desert Storm documented in-theater voice networks as the means to achieve the widest possible dissemination of missile warning data. Today, the reporting network utilized by Central Command during the Persian Gulf war remains in place to support Joint Task Force Southwest Asia. Additionally, within the past year United States European Command has established a theater voice warning network, and secure voice connectivity has recently been established between USSPACECOM and United States Pacific Command.

Finally, in an effort to put space originated information directly into the hands of the warfighters, we are pursuing projects such as joint Air Force/Navy programs like TALON SWORD and RADIANT OAK. Both programs are designed to enhance battlefield situational awareness in the cockpit.

The initial goal of these projects is to install a Multi-Mission Airborne Tactical Terminal (MATT) radio in the cockpit of attack aircraft. MATT is designed to intercept, process, and correlate intelligence data provided by national sources. The MATT radio, when fully integrated, will augment the ability of the aircraft's onboard system to sample the electronic environment and provide data directly into existing cockpit display consoles.

RADIANT OAK would increase the EA–6B aircraft's HARM missile effectiveness, by more efficiently targeting and managing the HARM weapons system with real-time intelligence data. In fact, full integration of the MATT system into the basic avionics package of the EA–6B would contribute to or satisfy thirty percent of the Operational Advisory Group (OAG) overall stated requirements, and forty percent of the identified near-term needs. Installation of MATT could potentially rectify sixty-two percent of identified shortfalls noted by EA–6B aircrews during Desert Storm.

These innovative applications to put space systems capabilities directly in the hands of our warriors in the field are just the beginning. Our primary emphasis will continue to give the "shooters" the support they need wherever they have to go in the most timely cost-effective manner possible. This immediate global support is the basis of the tremendous leverage space systems provide to reduce the total cost of military operations overseas—while maintaining the rapid deployment capability required in today's uncertain military environment.

SPACE CONTROL

During periods of conflict, USCINCSPACE is charged with the assigned warfighting responsibility of space control—ensuring the United States and our allies retain use of our space assets, while simultaneously denying hostile forces access to their space-based systems.

In order to explain the unifying principle for the application of space control, it may be useful to review the concept of sea control in maritime operations as an analogy. Using the definition of sea control, and applying it to the newest military theater—space, results in an extrapolation where space control may be defined as: "the ability to use space where, when, and how desired—as well as denying the enemy use of space in conflict."

Space Control involves surveillance of space, space system protection, and space system negation. USSPACECOM is tasked to ensure the continuing capability for space control by preserving capabilities to survey and monitor all militarily significant activities in space. We seek to design, develop, and operate space systems that will ensure the survivability and endurability of their critical functions. Additionally, we are working to develop and deploy the capability to negate an adversary's use of space to support hostile military forces.

Options for space system negation are bounded by the methods available to attack all elements of a space system. It may be useful to employ the terms "hard-kill" and "soft-kill" to differentiate between space system negation strategies; hard-kill can be accomplished by directly targeting the satellite with kinetic or directed energy weapons, or by attacking ground based reception, control, processing, and launch sites. Soft-kill methods would include jamming or intruding the satellite signal—targeting the satellite communication links or ground stations. These same strategies could also be implemented by agreements or arrangements with coalition partners, or supportive organizations as appropriate, to deny the acquisition of space-originated force enhancement products to an adversary in any future conflict.

During Desert Storm, coalition forces executed a dual-pronged attack on Saddam Hussein's reception and processing capabilities. Hard-kill air attacks against sites in Iraq were coordinated with diplomatic efforts that denied Iraq the ability to purchase space originated-data on the open market. This strategy was particularly effective against an enemy who was isolated from the world community. But, what if that is not the case in our next conflict?

An enemy's potential exploitation of space originated data serves as the catalyst for one of my most serious concerns as USCINCSPACE. My worry is that I may end up watching CNN as an entire Marine battalion landing team is wiped out on some foreign landing zone, solely because I was unable to deny the enemy intelligence and imagery garnered from space-based assets. It is my recommendation that we make the conscious decision to exercise the same rules-of-engagement in space as we employ in maritime sea control operations. The United States has long accepted the necessity to exercise freedom of passage at sea, and it is essential that we similarly retain the credible ability to preserve our freedom of action in space.

PEOPLE

When I entered military service more than 34 years ago, space was inaccessible to the warfighter. Visions of ballistic missile warning, satellite communication, satellite imagery of an enemy's deployment, three dimensional meteorological data, and navigation accuracy down to meters all were the dreams of the early space pioneers. Today, I am USCINCSPACE and COMAFSPACE because of those visionaries, but mostly because of all the magnificent men and women I have been privileged to serve with throughout my military career—especially during Desert Shield/Storm.

Desert Storm reinforced for me that, in these challenging times, every precaution should be taken to avoid causing violent harm to our single most important asset—our people. The bonds of trust and the peak morale we have attained after many years of committed rebuilding efforts should be nurtured and strengthened. Your military prizes the individual qualifies of courage and selflessness. Every day their courage is exhibited in their willingness to put the organizations' needs above their own, to change what needs changing, and to hold principle above rhetoric. Their selflessness is evident in their shared commitment to being the best. They set the highest standards, then willingly take total responsibility and accountability in attaining those standards. All they ask in return is our support.

If we effect change prudently, we need not worry about the future of our armed forces. You can see it today, in the capable and eager faces of the young sergeants and petty officers, Majors and Lieutenant Commanders, who every day leave their families to deploy to places with names they can't pronounce. Any change must appreciate that these men and women, regulars and reserves—volunteers all, embody the intangible qualities of the human spirit that dictate victory or defeat in war. When this innovative spirit and commitment to excellence that is our military heritage, are combined with strong support from our political, industrial, and civil sectors there is no challenge too difficult to master.

SUMMARY

The residual military capability and lingering unrest in the CIS, nuclear aspirations of nations like Iran and North Korea, recent disclosures of nuclear capability from governments like that of South Africa, and the expanding role of the military in drug interdiction efforts underscore the importance of the continuing mission of NORAD. The maturing role of space in support of the warfighter highlights the information and connectivity provided by space-based assets crucial to U.S. and coalition forces surging to counter regional conflicts around the world. Finally, the growing demand for space information spotlights the military need for space systems readiness, sustainability, and integration into future warfighting doctrines, as well as the necessity for a rethinking of space launch strategy to put these payloads in orbit.

I thank you for the opportunity to testify today.

AIR FORCE ACQUISITION OVERVIEW

STATEMENT OF MAJ. GEN. DONALD G. HARD, DIRECTOR OF SPACE PROGRAMS, OFFICE OF THE ASSISTANT SECRETARY OF THE AIR FORCE FOR ACQUISITION

Senator INOUYE. General Hard.

General HARD. Sir, I am very pleased to be here to join the discussions this morning. I have not much to add.

I have submitted a statement for the record. I would just note that we are facing a difficult dilemma in that, as you have heard and as you properly stated, Mr. Chairman, the understanding of the value of space systems is certainly on the rise. In other words, demand is up and it is the right kind of demand. It is from the warfighter, who really gets the true value from the space support we provide.

On the other hand, the difficulty comes because, as we all know, the budget is declining in the face of that demand. That leads us to some very interesting and very painful questions as to how we might best proceed to exploit the full capability of the systems that we have and to eke out better capability where it is needed.

I am looking forward to the questions in the very areas that you identified at the beginning of this session, and I am ready to get on with those questions, sir.

Senator INOUYE. Thank you very much, gentlemen.

[The statement follows:]

STATEMENT OF MAJ. GEN. DONALD G. HARD

Mr. Chairman and members of the committee, good afternoon, and thank you for the opportunity to address the Committee on the Air Force's proposed space programs as presented in the fiscal year 1994 budget: The Air Force supplies space support and services for the Defense Department. As we look to a future of primarily U.S. based, smaller, highly capable, flexible, and mobile fighting forces, space 'systems will provide the global situational awareness and connectivity to understand the battlefield even before our other forces arrive. We can monitor activities around the world and command and control our forces to ensure the most effective application of power. This provides support to both the initial deployment and sustainment of terrestrial forces deployed to areas without an indigenous infrastructure for supporting military operations.

I prefer to emphasize the products and services provided by our space systems to the National Command Authorities and the combatant commanders and, may I add, to the Nation as a whole. Our budget and programs are often defined by the equipment we acquire; so, I am forced to describe our fiscal year 1994 budget request in those terms. However, I find that by focusing as much as possible on the support and services provided, we are better able to define comprehensive approaches to satisfying requirements. By eliminating artificial programmatic and organizational boundaries, we can more clearly see the scope of those efforts. So, today I will highlight the Air Force's proposed programs within the support areas of military satellite communications (MILSATCOM), tactical warning and attack assessment (TW/AA), navigation, and earth observation. In addition, I will highlight a critical secondary supporting area of spacelift—without which none of the space services can be maintained.

I must qualify some of what I will say. Certain areas—especially MILSATCOM, TW/AA and space launch—are topics in the DOD's on going Bottom-up Review. This review will result in guidance that could change some of the concepts I will describe.

Our priorities in each of these areas is first to sustain the operational space systems which provide the support critical to our users. Second, we will continue ongoing deployments of new systems, ensuring they fit into our overall Defense strategy, on a prudent schedule, meeting final operational capabilities. Last, we will pursue research and development of space systems to satisfy new mission needs where the investment will have significant payoff, where the programs have been shown to be absolutely essential to counter new threats, and to leverage the declining force structure.

In MILSATCOM we have already started bridging artificial boundaries. We consolidated 13 separately defined Military Satellite Communications efforts into a single, joint program office that will give customers throughout the Department of Defense "one stop shopping." We did this to ensure that the Air Force could respond effectively to the changing customer base and mission needs of the armed forces. Ultimately, this will enable us to focus on systems engineering while working in an integrated rather than "stovepipe" environment.

The Defense Satellite Communications System (DSCS) is a mature system which the Defense Department depends upon for secure voice and high data rate communications. We will continue to replace spacecraft as on orbit assets reach the end of their useful mission life. We plan to launch a satellite in 1993 and in 1994 to maintain the required constellation. We will participate in exploration of opportunities for international cooperation with the United Kingdom and France in our next generation of communications spacecraft. We believe that a joint program offers opportunities for investment cost savings and improved interoperability with our allies.

Milstar continues toward its first launch in late 1993, fully compliant with our agreements on restructuring the program. In fact, the program as approved by the 1992 October Defense Acquisition Board (DAB) is even leaner than the one discussed in the restructure. The DAB program features just four satellites to provide better communications support in the mid latitudes and substitutes a Milstar-like system that is a less expensive polar adjunct for coverage over the North Pole. Our final recommendations on the polar adjunct will be presented to the DAB in 1994. The Air Force has deferred its requirements for production of bomber and launch control center based Milstar terminals, further decreasing the costs of the program. We intend to continue to pursue technologies that can bring down the cost of both the space and terminal segments of Milstar while providing improved service and support. In addition, we have reduced the schedule risk for satellite 4, the first medium-data rate (MDR) capable satellite, by eliminating concurrent development and fabrication. This has delayed the launch of satellite 4 by approximately one year, but has allowed us to reduce our fiscal year 1994 RDT&E request by $180 million.

Similarly, in the area of TW/AA, we intend to consolidate our two early warning program offices into a single space based tactical warning and attack assessment program office. This will help us ensure a smooth and efficient transition from an era dominated by the Defense Support Program (DSP) towards the capabilities of the Follow-on Early Warning System (FEWS). We are progressing toward contract awards for the DSP spacecraft and sensor in the coming months for three satellites (numbers 23 through 25). In the fiscal year 1993 bills, Congress provided multi-year procurement authority for this buy, which will save $237 million, or 16 per cent, over an annual procurement method. At the same time, to ensure maximum flexibility, we have structured these contracts to minimize termination liabilities. This will allow us to cost-effectively delete a satellite if future conditions indicate that one of these satellites is not required. At this point, however, these three satellites are crucial to the successful transition from today's DSP support to the future advanced capabilities of the FEWS. Specifically, in fiscal year 1994 we continue advance procurement and begin procurement of the sensor for satellite 23. Also, during fiscal year 1994 we expect to launch another DSP on a Titan IV booster with an Inertial Upper Stage.

FEWS—sometimes referred to as the improved, space based, tactical warning and attack assessment system—received strong support from the DAB and was fully funded in our future years' defense program. The program will provide us with a needed upgrade in our ability to detect the launch of long and short range ballistic missiles for use by the National Command Authorities as well as by our theater forces. Increased sensitivity to detect dimmer theater ballistic missiles, earlier warning time, transmission of warning information directly to theater users, and improved coverage of the world will provide the space services we need as the ballistic missile threat continues to proliferate through numerous countries. We are continuing to work with the Army and Navy to best structure the flow of data directly from the FEWS satellites to the theater forces who need it. We are nearing the halfway point of a two-year Demonstration/Validation phase, and will met a DAB Program Review in September to review the progress of critical technologies and manufacturing processes. With the successful completion of this review, we'll be getting ready to select the single contractor in the summer of 1994 to finish the design and start building satellites.

The Cheyenne Mountain Upgrade (CMU) program to improve the capabilities of the integrated TW/AA complex continues. The CMU program management difficulties of the past three years are now behind us. Results from Developmental Test and Evaluation of CMU's individual systems in Colorado Springs predict success in the upcoming Operational Test and Evaluation beginning this summer. Still, from now until the end of 1995, CMU will be in what has traditionally been the most challenging phase of any program—integrated testing.

In navigation, our Global Positioning System (GPS) is progressing towards its initial operational capability later this year and towards a final operational capability of 24 operational satellites in 1995. High reliability, high precision, all weather navigation and time will soon be available 24 hours a day on a world wide basis to users with hand held terminals costing less than $1300. The Air Force considered procuring two optional GPS Block IIR satellites because of their low cost, if bought as part of the four multi-year satellites. But because the optional satellites are not required for purchase until fiscal year 1997, the Air Force decided to concentrate procurement resources on the integration of GPS receivers on aircraft. The Air Force, through Project 2000, plans to install GPS receivers by the year 2000 in all existing aircraft that are projected to remain in service into the next century. I can assure you that the early integration of GPS on our aircraft is getting attention at the highest levels in the Air Force. The fiscal year 1994 budget proposes an additional $36 million to support this acceleration. The Air Force also understands the value of GPS to civil users, and we want to ensure these users fully benefit from GPS—while preserving the military's unique requirements. Because of this, the Air Force is actively participating in a joint DOD/DoT task force with the goal of obtaining as much civil value from GPS as possible.

In the area of earth observation, we anticipate a launch of another Defense Meteorological Satellite Program (DMSP) satellite this year as required to continue to provide the support we are so accustomed to. We are continuing development of a small tactical terminal that will provide meteorological data directly to the Air Force and Army mission planners who can best exploit the data. Current technology will allow us to miniaturize this capability from 26,000 pound units of the Desert Storm era to 700 pound systems to be fielded in 1995. We are enhancing an already close relationship with the Department of Commerce weather satellite program to explore potential reductions to the overall cost to the government in providing necessary civil and military meteorological data. Both existing systems, DMSP and the National Oceanographic and Atmospheric Administration's Polar-orbiting Operational Environmental Satellite (POES) program are proposing block changes in the post–2000 time frame. Further integration of the programs may be possible after a joint agency analysis of mission requirements and careful scrutiny of existing system configurations.

Lastly, essential to all of our space programs, is the launch and ground support element. In fiscal year 1994, the Air Force will provide the services and ground support infrastructure to launch, establish and maintain the necessary constellations. In fiscal year 1994, we will launch three Delta II boosters to continue deployment of GPS operational satellites. We will also launch an Atlas II to support the DSCS constellation, and an Atlas E for DMSP. Six Titan IV launches are scheduled in fiscal year 1994, including the first Milstar mission and a DSP mission. For Titan II, we plan to launch the SDIO's Clementine mission, and we'll have the capability to launch replacement satellites for DMSP and NOAA's Advanced TIROS program, if required. The Pegasus program will support the launch of three Air Force Space Test Program missions in fiscal year 1994. Some launch infrastructure modifications will be required to maintain a viable spacelift capability for the remainder of the decade.

The fiscal year 1994 budget request contains significant funding to repair, upgrade, and improve the nation's space launch infrastructure. We are continuing efforts to repair the critical elements of the physical plant at both the Eastern and Western space launch bases. We are proceeding with projects to replace much of the aging range equipment on both coasts with modern, more reliable, and less labor-intensive equipment; the Range Standardization and Automation project is the largest of these. The currently operational space boosters are being upgraded with improved safety systems to meet current standards, including better protection of life and property. Launch support facilities at the Eastern Range are being upgraded with new equipment and improved protection against lightning strikes.

We anticipate Titan IV, which has the highest payload lift capability in our space launch inventory, will continue to serve our needs through the turn of the century and beyond. This is a significantly different role for Titan IV than we envisioned when we began the program as a mere complement to the space shuttle in 1985. At that time, we planned only 10 Titan IV launches through 1993. We now have 41 Titan IV vehicles on contract, but our projected launch rate has also changed dramatically.

The substantial role Titan IV plays in meeting our requirements for spacelift requires us to make prudent investments in upgraded facilities and equipment to ensure cost-effective access to space. The solid rocket motor upgrade (SRMU) program, one such investment, has recovered from its early technical problems and has demonstrated three successful test firings to date. There are two additional tests in the SRMU development program planned, and we expect to complete those by August of this year. We have taken aggressive actions to resolve the business disputes related to the SRMU subcontract as Congress directed in the fiscal year 1993 Appropriations Act for the Department of Defense. In fiscal year 1994, we expect to provide funding for required upgrades to booster safety systems and launch infrastructure which will help us posture for the long future we anticipate for Titan. We are realigning production schedules to reflect changes in satellite launch requirements while maintaining a sound industrial capability to sustain product quality and highly reliable launches. During the next several months, we will complete a detailed evaluation of the Titan IV program and its requirements to establish a firm baseline against which we can make future budget and mission effectiveness determinations.

Competition for our newest spacelift capability, the Medium Launch Vehicle (MLV) III, was concluded in April with the selection of the Delta II launch system manufactured by the McDonnell Douglas Corporation, in Huntington Beach, California. The MLV III competition was conducted to provide launches for 25 GPS IIR satellites. There are 11 launches on the priced options for other satellites as required. Advance procurement of long-lead items is planned for fiscal year 1993, with procurement of two Delta II spacelift vehicles in fiscal year 1994. The first launch of the GPS IIR is scheduled for fiscal year 1996.

For several years, the Air Force has supported the need for a new and more reliable system to meet the longer-term national security, civil, and commercial spacelift needs. Several efforts have been initiated in the past; e.g. the Advanced Launch System program which was based on very high launch rates and provided very heavy lift capability which would have supported a massive SDI architecture deployment. When launch rates dropped and SDI deployment choices changed, we transformed the Advanced Launch System program into the National Launch System program. This program also captured a broad set of DOD and NASA requirements (manned and unmanned) and was therefore expensive. In addition, it shared management between the National Aeronautics and Space Administration (NASA) and the Air Force which proved unwieldy.

As I noted earlier, future spacelift is the subject of an ongoing OSD Bottom-Up Review. The Air Force also has initiated a review of needs and created a process to gather the Nation's spacelift requirements. Our focus will be on unmanned requirements below 50,000 pounds to low earth orbit (LEO). We see benefit in first capturing the MLV (approximately 20,000 pounds to LEO) capability and later growing that to meet the full range of un-manned spacelift needs. There are several launch concepts now in the marketplace, from improvements to existing launch vehicles all the way to Single Stage Rocket Technology (SSRT) and the National Aero-Space Plane (NASP). All alternatives need to be considered in open competition. By mid-fiscal year 1994, if a decision is made to proceed with a new vehicle development, the Air Force will be prepared to solicit approximately five concept study contracts. This solicitation will create a healthy competitive environment allowing all launch industry concepts to be fairly compared against the Nation's requirements. Associated with each concept will be additional funds to demonstrate concept feasibility and/or reduced risk for the government. These concept studies, which are expected to last about a year, would then form the basis to down select to one or two concepts prior to entering the demonstration/validation phase. At that time, costs for each concept would be developed and affordability decisions would be made as appropriate.

We believe this approach is sound and would ensure the Nation receives an affordable, operable, and competitive space launch system in the next century. We look forward to working with the Congress on space launch matters and are happy to receive your viewpoints on the proper future course for the Nation in this endeavor.

In summary, we continue to challenge ourselves and our customers to consider less costly alternatives to ongoing programs and products. We feel this is an important element to ensure the requirements we base our programs on represent the essential needs of our combat forces.

ROLES AND MISSIONS

Senator INOUYE. Dr. Quinn, the JCS Chairman's roles and missions report recommended a review to determine whether the primary responsibility of the space mission, the military space mission, should be assigned to the Air Force. There are now reports that the Army and Navy are concerned that their priorities in operations and acquisitions would suffer under this arrangement.

What can we do to eliminate these concerns or allay their fears?

Dr. QUINN. Well, the way that we are organized now, as you know, the Air Force is responsible for some of the space mission, which does cut across the other service lines. Many of the programs are joint programs. One program is operated by the Navy. The Joint Staff actually determines the allocation of how those space assets are used.

In the case of the communications satellites, for example, they determine how these channels are assigned, the particular missions to which they are assigned, and priority given to the particular mission that is of importance at the moment.

So, there is an examination of what priorities are in effect at the moment and the channelization is assigned that way. That is the way it would be done with all of the space assets, simply the same as it is done with tasking of surveillance assets.

So I think as long as the Joint Staff has that role of looking at priorities and seeing how the assets are divided, the interest of each service is protected.

As far as the acquisition goes, we do the same thing. Each service has a responsibility for acquiring particular space assets. In some cases, where the programs are joint programs or national programs, the budgets do suffer occasionally in the budget preparation process. It is the role of the Office of the Secretary to review these budgets and, again, looking at the needs of the whole Department, to insure that budget priorities are readjusted and that funding is reestablished for those programs to maintain the best balance across the interests of the whole Department.

That is a process in the normal budget cycle that usually occurs over the whole summer. It is done with a great deal of deliberation and detail. I think it has worked in the past.

So, regardless of who is responsible for the particular hardware, there is a method to insure that each service's needs and mission priorities are protected.

MILSTAR

Senator INOUYE. Well, I believe this question came about because in the Milstar situation the Air Force declared that it was not high priority, whereas, on the other hand, the Army and Navy considered that to be the highest priority.

How do you resolve that?

Dr. QUINN. Well, that was an issue of affordability with the Air Force.

I would ask General Hard to also address this problem.

But when the whole budget was examined by the Department, the funding was restored. The Milstar system, as you know, has been examined on a departmentwide basis over the past year or so and has been reduced in size from what it was originally. At one time, the Milstar program was a 10-satellite program. It was reduced then to a six satellite program, and in the most recent restructuring in the budget reductions, it was reduced to four satellites.

But the program now is fully funded. The satellite program approved by the Defense Acquisition Board is fully funded. So those funds have been programmed to support it in spite of the Air Force's initial action.

General HARD. May I add to that, Mr. Chairman?

Senator INOUYE. General Hard.

General HARD. The Air Force actually proposed the restructure of the Milstar program. It was popularly reported that we had proposed termination.

It turns out that the exact options that we looked at in our budget drills are the very same options that are being looked at in the bottom-up review.

We had focused on one of those options, which we called a distributed architecture, which allowed us to take some of the payload and capability that was planned for the Milstar program and put it on other platforms.

After we had gone through that in more detail with the bottom-up review, we agreed that that may not be the best option. But we still held it at a very high priority. We were merely trying to see if there were ways to provide a similar capability that the baseline Milstar program provided at less expense over the life cycle. That is why we made the proposals that we did.

COMMAND CONSOLIDATION

Senator INOUYE. General Horner, does it make sense to merge the Space Command into the Strategic Command administratively and operationally?

General HORNER. Mr. Chairman, of course there is the study that is in progress on that very subject. When I first went to Space

Command, it was proposed that the Army and Navy Space Commands would be disestablished in order to avoid duplication in the services of space operations.

If we did that, we would have a component command, Air Force Space Command, and then a unified command, U.S. Space Command. Organizationally this did not make sense.

So when I went to U.S. Space Command I went out there with the attitude to look around and see how to accommodate this change if it came to pass.

What I learned was that there is some residual duplication between the Navy and the Air Force in the terms of operations, launch, and operation of satellites. This is a function of Navy early interest in programs such as TRANSIT in some of the UHF communications programs. They, by their very nature, are being replaced by Air Force programs—GPS and DSCS.

So the direction is emerging toward the consolidation of operation and launch of space operations in the Air Force Space Command.

On the other hand, I found that the Army and the Navy Space Commands were fundamentally vital to those services because they brought people in, warfighters in, and educated them on space. It gave the Army, the Navy, and the Marine Corps the ability to enter into the requirements process first hand with regard to space systems. To make sure that their operations were supported by space systems and, even as importantly, it took those individuals back out to those services where they made sure that those services were exploiting the space capabilities that were available.

So I came away with the feeling that it is fundamental that we maintain the functions that are filled today by the Army and Navy Space Commands.

If you maintain Army, Navy, and Air Force Space Commands, then a unified command makes sense. However, I have not taken a position on the subject because I want to see whatever makes sense. There is no doubt about it—we have to become efficient. We have to make sure that we are spending the taxpayers' money as wisely as possible.

I think, from my initial assessments of the feedback I am getting, that we will probably continue with U.S. Space Command.

NATIONAL RECONNAISSANCE OFFICE

Senator INOUYE. Last year, as you know, General, the National Reconnaissance Office was declassified and made public. Since then some have questioned the need for NRO. Still others have suggested that you should handle all satellite programs and NRO should be disestablished.

What do you think about that?

General HORNER. It is obvious. When I got out in space, being somewhat of a novice, I took a look at everything and questioned everything. In addition, having come from my Desert Storm experience, I had some questions on how we best use our intelligence information and how the warfighter maintains access to it.

I have always come away with a deep admiration for what the national intelligence community does for this Nation and how they support the warfighters. So anything I say with regard to changing things should not be construed as criticism.

With regard to the information process, one of the things that concerned me was the feeling that the warfighters had difficulty bringing their requirements into the process. As a result, I have tasked the Air Force, Army, and Navy Space Commands to contact the warfighting components for the unified commands and consolidate all their intelligence requirements.

I will then take this rather lengthy product and get rid of the duplication and as the unified commander, coordinate with all the unified commanders to make sure that we understand the needs for all the more regional warfighters. Provide these to Admiral Jeremiah for use in better articulating the military warfighting requirements for overhead information.

This has not been done in the past. We have tended to look to the intelligence community—DIA and other agencies—to represent us, and they have done a very good job.

Senator INOUYE. That process is not now operational?

General HORNER. The process of combining the user requirements in a unified command document is in process. It is a very difficult process and we just started it last year.

Again, I do not see any great changes, other than reiterating the need for wide area synoptic coverage, which I think is fairly well recognized. Certainly General Schwarzkopf brought that up after the war.

Other areas that I look at include the procedures by which we work the intelligence data. As a warfighter during Desert Storm, we were inept in collection management because we had not worked and practiced in exercises. We need to exercise this requirement.

In every unified command exercise, every component command exercise, the intelligence people of the services need to work collection management to include setting priorities for access to the overhead system.

Prioritization worked fairly well during the war. I never had any doubts about our getting support and priority. The problem we had was in the mechanics. Since we had not practiced in peacetime, the warfighters, in fact, had no knowledge of what the inventory was with regard to information already existing. They also had no knowledge on where their requirements were in the queue, how well they were going to be satisfied.

In addition, as we examine this, we find the need for the warfighter to be able to enter the priority system on a very rapid basis—this idea of information warfare. So as things break in warfare—for example, the battle of Kafji, where the 3d Armored Corps came down and attacked the town of Kafji in Saudi Arabia—we had very short notice requirements to reprioritize our requests and get information. We need to get into the cycle times with regard to planning for programming the overhead imagery and receiving it on a very timely basis.

Eventually I would like to be able to see us into that process to where we enter the planning cycle at the last moment, receive the information, analyze it, and send it directly to the cockpit of an F–

18 or an F–16, and really put space in the cockpit, on the bridges of the ships, and in the foxholes.

With regard to acquisition of space systems, as the user, I am reluctant to get into that discussion. I am certainly interested in what is acquired and certainly interested in becoming involved in the requirements process. [Deleted.]

So that is an issue that I have purposely avoided. It's not that I am not interested. It's just that there are other people who are better educated and experienced to handle that problem.

CONTROL OF SPACE

Senator INOUYE. General Horner, a spokesman from your command recently told the House Defense Appropriations Subcommittee—and I am going to quote him:

> We are working to develop and deploy the capability to negate an adversary's use of space to support hostile military forces. Options for space system negation could cover the spectrum from interfering with satellite data links to destabilizing a hostile satellite system or, if necessary, destroy it.

Can you elaborate on these comments and identify what specific weapons and deployment concepts the spokesman had in mind?

General HORNER. The importance of space, the fundamental nature of information warfare to modern warfare demands that we be able to influence the abilities of the enemy to exploit and control space.

We did that in Desert Storm. We targeted space use primarily by targeting the Iraqi space reception facilities, the ground stations.

We also used diplomatic negotiations to insure that the Iraqis did not receive third-nation imagery.

That was vital to our warfare. It was vital to General Schwarzkopf's basic plan to do the end run, to move the 18th Airborne Corps and the 7th Corps and the French forces out to the west, to where they were able to encircle the Iraqi army.

He would not have been able to do that with secrecy had the enemy had overhead imagery.

I believe it is fundamental that we be prepared to fight that war in the future. How we do that obviously is not the military's decision. That is a policy decision that the political leadership and the policy leadership of our country needs to make.

On the other hand, the military must be able to offer them options for conducting these operations. It will be fundamental to the very lives of our men and women on the battlefield.

There are a number of programs which I believe are important and need to be considered to do that mission.

Senator INOUYE. So you believe, General, that the Congress made a mistake in opposing the deploying of, say, Brilliant Pebbles and the fielding of ASAT systems?

General HORNER. Sir, I would like to set the Brilliant Pebbles controversy aside. It was primarily for ballistic missile defense, which I feel very strongly about.

The ASAT systems have been proposed to provide a capability to do the mission, such as the Russians have today with their ASAT system. We have demonstrated in the past that we can do the mission. The F–15 had a kinetic energy ASAT missile that intercepted a space vehicle and destroyed it.

That is only one way to do the mission. So I, as the U.S. Space Command, did not oppose the measures that were taken that limited the funding for the Army's KE ASAT system, for example.

Senator INOUYE. I have many other questions, gentlemen. But for the time being I will hold them up and will now call upon Senator Cochran.

Senator COCHRAN. Thank you, Mr. Chairman.

PROGRAM MANAGEMENT

General Hard, you mentioned in your statement the national launch system and some difficulties resulting from the shared management between NASA and the Air Force. I think you used the word "unwieldy."

There is another shared management program as well, the national aerospace plane, which has had difficulties in being funded in the NASA budget.

I am wondering whether you would go so far as to recommend that we reorganize the way we manage these programs. I don't have any notion as to what would be the better alternative, whether to turn over to the Air Force one or the other or to make some other changes.

What do you think the possibilities are for improving the management of these systems to help insure their continued support by Congress, if they do deserve support, and making them work more efficiently? How could we do a better job of that?

General HARD. Let me first speak regarding the management approach for satellite launch vehicles, if I may.

Senator COCHRAN. Yes.

General HARD. When we work with NASA in trying to define a joint program structure, we realize that there are distinct cultural differences in the way that the NASA runs acquisition programs and the way that the Air Force runs acquisition programs.

We looked at a whole series of management approaches. We wanted to take advantage of the resources of both organizations. NASA has very good capability, for instance, in the propulsion technology and development of launch systems at their center at Huntsville. The Air Force, on the other hand, feels very strongly about holding contractors' feet to the fire in terms of providing capability. The question of Government-provided equipment versus contractor responsibility for providing that equipment arose.

As we looked through the management structures, we found that they were unwieldy because we tended to go toward a structure where with each layer of management you have on the first layer an Air Force person in charge with his deputy at NASA and in the layer underneath a NASA person in charge with his deputy in the Air Force. It clearly was unwieldy.

Later on, we decided that perhaps a better approach would be to focus the negotiation and find the mix and match between NASA and Air Force at the requirements box, if you will, and then give the acquisition program to either NASA or the Air Force to conduct within their own cultural approach for acquisition.

We preferred to keep the acquisition program within the Air Force because we felt the Air Force had the driving responsibility to insure that we could launch national security missions.

As we progressed, we also saw that we were trying to devise a system that answered all requirements, and we have backed away from that somewhat, wherein the Air Force is only looking at a system that would support military requirements, recognizing that it could contribute to NASA's civil requirements and even commercial requirements, NASA is now predominantly focusing on their requirements for manned space launch, interplanetary travel, and transportation to and from the space station.

So there seems to be a natural division and there seems to be an acceptance that perhaps we can find a way to resolve our differences at the requirements end and then let one organization or the other pursue the acquisition with its own management style.

TEST FACILITIES

Senator COCHRAN. There is one large investment we have in my State, down at the Stennis Space Center in Hancock County, MS, on the gulf coast, for testing engines and also other components, which would include components of the national aerospace plane.

What I hope we can avoid is pressure from the Air Force to create or duplicate the testing facilities at California or somewhere and end up costing the Government a lot of money needlessly, when we have some very important investments already in place under the NASA organization.

General HARD. Yes, sir; we are engaged in a study with NASA looking at the infrastructure support, the resources that are available exactly as you identified within the Air Force and within NASA to see if there are areas of duplication that can be avoided and to see if there is a sensible approach in which we would integrate and consolidate, where appropriate, those activities.

The problem that we face is we end up in a discussion of which follows which. Do I consolidate and make sense of the infrastructure and let mission assignment and mission responsibility follow that? Or do I assign mission responsibility as regards who pursues the next acquisition program and let the infrastructure follow that assignment.

At any rate, there is a good review going on now and we are arm in arm with NASA to insure that we understand exactly where the overlaps are and where we can find some economies.

Senator COCHRAN. Is this part of the bottom-up review or is this separate?

General HARD. No, sir; this is separate. It was initiated by NASA. Mr. Golden started the review. It was about the same time that we started the bottom-up review. It fits very nicely with some of the work we are doing in the bottom-up review on launch vehicles.

NATIONAL LAUNCH SYSTEM

Senator COCHRAN. What do you think the future of the national launch system is?

General HARD. Well, I would be less than candid if I did not say it was questionable.

We, in the Air Force, believe that the demand for an improved launch capability is a very significant demand. I would observe that the only thing that has kept us from going to that improvement is simply perhaps a lack of commitment and a search for something that is a little bit better, rather than being satisfied with something that is good enough.

We did try to embrace too many requirements with a single-system approach. I think we have figured out a way to do that better, starting off with a medium-launch vehicle range, where we can capture 75 percent of our requirements, many of the NASA unmanned requirements, and all commercial requirements.

We would like to expand that eventually to capture the larger payloads because we know that we can save a lot of money there.

The saving comes from operating one set of infrastructure, launch pads, if you will, and supporting facilities with one standing army, as we call them, rather than the three or four that we have now, five if you count the NASA army as well.

So we think there are very good options available that make sense, cost effectivenesswise, across a life cycle of 30 years, which is how long we have been operating today's vehicles. [Deleted.]

The problem is that if I go from Atlas to Titan, instead of going up in PHCE by 10 percent to meet that 10-percent performance improvement, I go up by 300 percent.

I see a direct connectivity, then, and an artificial forcing of the design of our satellite vehicles to fit the launch vehicle inventory that we have been stringing along for the last three decades.

RUSSIAN PARTICIPATION

Senator COCHRAN. My last question, Mr. Chairman, is in view of the Soviet expertise in some of these areas and our new relationship with them, do you see any possible collaboration or any borrowing, renting, buying of technology or transferring technology or equipment to our systems here? Would that be cost effective? Is there any discussion or examination of those possibilities going on?

General HARD. The market forces are at work here. There are a lot of initiatives that have been started by our industry.

The favorite approach seems to be one in which we license the technology that has been developed and pursued in Russia and build the hardware here in the United States.

I have had some representatives of our commercial companies, our industry representatives, tell me that they could shorten the time that it takes to get them to a new engine that way, for instance, and also save a fair amount of money in doing so.

The Energomash, which develops the larger engines for Russia, would decline that, however. They prefer to not only keep the technology but also to build the engines over there.

There is a lot of effort going on now to see if some of this makes sense: Of course, it is tied in with the policy of our dependence on foreign capability to launch national security payloads.

Prudent policy would say that we always want to be masters of our own fate and to have our own control over the launch vehicles that we build and operate for national security missions.

On the other hand, we cannot hardly turn down a good deal if there is a tremendous saving to be made, if we can figure out how to do that and still meet all of our other desires in terms of American jobs and so forth.

It is a difficult question. Just let me summarize by saying there is a lot of activity trying to find new approaches there.

Senator COCHRAN. Thank you.

Thank you, Mr. Chairman.

Senator INOUYE. Thank you, Senator.

NATIONAL LAUNCH SYSTEM

Before I call upon Senator Gramm, may I have some clarification on your response to Senator Cochran's question on the national launch system.

We are not talking about the old system that cost $15 billion are we? You are talking about the space lifter?

General HARD. Yes, sir; I apologize for not using the new terminology.

The national launch system was pursued as a joint program between NASA and the Air Force and it included the full range, all the way from 20,000 pounds and less in payload to a low-Earth reference orbit up to 200,000 pounds. It demanded, therefore, several different configurations in the core of the launch vehicle itself.

The system that we have proposed to pursue concept exploration for in 1994 and 1995 to meet the Air Force and Department of Defense needs would be a single, small-launch vehicle that we would start off in a medium-launch vehicle range. It would be a single core and might have a couple of different upper stages and might eventually grow to 50,000-pound capacity. We call that the space lifter system, sir.

Senator INOUYE. Thank you.

Senator Gramm.

Senator GRAMM. Mr. Chairman, thank you for holding the hearing and for recognizing me.

I do not have enough information to ask a lot of questions. I would just like to make a couple of comments, at least in terms of letting the Air Force know how at least one member of the committee feels.

First of all, I would like to go back to Senator Cochran's question regarding purchasing from foreign sources. Based on my 4 years on the Armed Services Committee where, in the name of the national interest, we refused to buy foreign textiles, I guess on the assumption that we wanted to be sure that people had American-made drawers if we ever had to fight World War II again. I have always believed that the national security argument based on a World War II-type conflict, is wrong. It is probably not 100 percent invalid, but that what we are hearing is an argument that is 99 percent based on narrow special interests which exploit the American taxpayer, and is probably 1 percent based on any real concern about a viable scenario where we would be in a prolonged conflict and where the unavailability of a domestic product is really relevant.

I would just like to say that, from one person's point of view, I am always mystified that we have a very favorable balance of trade in military hardware, and yet we continually give our trading partners excuses to be protectionist through our own actions. We probably lose a lot more jobs than we gain in the process.

As our defense budgets get tighter, and they clearly are going to now that the budget firewall is down—we have just had action in the House which is going to cost us a minimum of $2 billion and probably is going to end up costing us $3 billion—I think that it is very important that we take a long, hard look at foreign acquisition where it is a lot cheaper.

I do believe that there is a problem with duplication in space, especially in things related to space. In the fat period, I remember I had grave doubts about setting up a separate military space command. If I could go back and change that vote, I would do it.

I think that we are going to have to find a way to get more joint use out of what we are doing. The civilian space program is in deep trouble in the Congress, partly because of the budgetary constraints and partly because of our indecision about what we are going to do about the space station.

So I would just like to urge you to look very hard at trying to eliminate duplication.

My own experience has been that duplication is almost the last thing eliminated in times of tight budgets. If I can be any help, please let me know of any duplication you believe exists and that you are having trouble getting anybody in Congress to eliminate, I would be interested in working with you on that.

PRINCIPLE OF MODERNIZATION

Finally, Mr. Chairman, let me just say that if there is one principle I am committed to, it is the principle of modernization.

I think one of the things we learned in the gulf war is that in a free society, if you are going to have public support for fighting a war, you are going to have to have technological superiority. Having a big military does not do you any good if the public is not going to allow you to use it and if potential adversaries know you are not going to use it.

So as we go through this builddown, I think it is very important that we continue modernization, especially in areas such as the use of space, even if it means that we have to have a substantially smaller force.

I personally would rather have a smaller military that is better equipped, that is more modern, than a larger military that has not continued the modernization process.

Finally, after my long lecture, I do want to try to get an insight into your thinking, General Horner. You talked about the possibility that on the battlefield of the future we might be dealing with an adversary that might have satellite capacity.

I tried to think who that would be. The only thing I could come up with would be either a major confrontation that would involve Russia or China or a confrontation where we're dealing with a client state where a major power is allowing the client state to use their satellite information.

I want to get your thinking as to what kind of possible scenarios we may be looking at where an adversary on a battlefield would really have satellite technology.

BATTLEFIELD SCENARIOS

General HORNER. Senator, I think I can go back to Desert Storm and give some examples and project that in the future.

Iraq could go out and buy GPS receivers on the free market. We will not deny them the use of that information because to do so would also deny it to our forces.

Now, as you may well know, we have the means to distort the signal so that it is less usable. But it is kind of like the oxygen we breathe. We and the enemy are going to share that.

My goal is to make sure that our systems are able to take the most accurate element of that signal and use it. We need to have it every day. So we train and we check our equipment to make sure it is working.

On the other hand, I will not be able to deny the enemy the use of our own satellite GPS information. So I say what threshold do we establish. I think the threshold there, that meets my former logic, is if we can deny him the ability to use it for guided weapons, then I cannot deny him total use of it. He will be able to navigate to within a reasonable accuracy, but he will not be able to use it for guided weapons, such as we will be able to use with our coded signal.

Senator GRAMM. General, let me just ask you one more question.

Do we have any evidence that the Iraqis were able to use any of our satellite capacity against us in the war?

General HORNER. [Deleted.] I would think in any future war the enemy will have GLONASS or GPS systems.

Senator GRAMM. So your concern is the ability, through technological breakthrough of the adversary, to decode and use the same technology; to use our technology against us?

General HORNER. I think we have to have the measures to deny him the ability to use it to some level. I cannot deny it totally, but to some level. And we work that very hard in our exercises, in our space control exercises.

Another example is during the war—and this is the nature of modern warfare—both the United States and Iraq used the same communications satellite. We leased off ARABSAT, which we were both using.

So there you have a case where you had a country that had access to space information. Yes; we could have gone to the owners and operators of ARABSAT and said shut it down for the period of the duration of the war, but it would have denied us the use of it.

So these things have to be looked at in a broad context. There is no one answer. We need options to do this kind of operation.

Senator GRAMM. Well, I am glad I asked because it conjured up in my mind the need to shoot down a satellite. I have never understood the logic of not developing that technology.

You know, I debate things everyday with people where I do not understand where they are coming from and I am sure that they, more often than not, feel the same way about me.

Senator BUMPERS. Oh, I just can't believe you said that. [Laughter.]

Senator GRAMM. I never understood why we didn't go in and develop that technology. I am glad I asked because I now understand that the problem goes beyond concern that they might have access to their satellite. The problem basically, at least for the kind of scenarios that we would envision, is their access to our own satellites, which we are not going to shoot down, obviously.

General HORNER. No, sir.

I could conjure up a scenario where a country has, say, a low-Earth imaging satellite, and our strategy, as it was during Desert Storm, is to deny him information about our movement of forces out to the west.

If we do not have the capability to intercept that satellite or, worst case, to destroy it, maybe our negotiations toward denying him the use of that satellite would be weakened.

So, sometimes having a capability and not using it is very militarily useful.

Senator GRAMM. Thank you.

Thank you, Mr Chairman.

Senator INOUYE. Thank you

Senator Bumpers.

Senator BUMPERS. General Horner, continuing the question that Senator Gramm was just asking, I had written down a question similar to that, which was, did the Iraqis attempt to jam any of our communication satellites during Desert Storm?

General HORNER. [Deleted.]

DAMAGE ASSESSMENT

Senator BUMPERS. Let me ask you this, though I am not sure you are the right person to ask it of, but in case you are, here it is.

I remember General Schwarzkopf complained rather bitterly after the war about what he considered inferior and often misleading battle damage assessments. What was the problem with that, if it was a problem?

General HORNER. The issue on battle damage assessments is really a complex issue. In war, you want to know as much as you possible can, obviously. In war, the enemy obviously does not want you to know anything. So you are always dealing with half truths, and you learn to live with that.

We grew up in an information society. We want to know everything. We put it all in the newspapers and we live on statistics and modern management principles and such.

In war, you are faced with uncertainty, with making decisions on half information, and then with changing those decisions as you gain insight.

One of the things, for example, that was fundamental for the battle damage assessment was on the Iraqi army. We had pretty good BDA on the fixed targets, because we got it off the F–117 or the F–111 armament data recording systems.

Where we did not have good information was on the status of the Iraqi army units. That was of vital concern because one of the things we wanted to do was to avoid friendly casualties. So General Schwarzkopf did not want to attack the enemy until he had reasonable assurance that we were not going to incur large numbers of casualties.

He wanted them beaten down by air. He wanted to hold the initiative with air. So it was a question of timing as to when to start the ground attack.

The trouble is that our information gathering systems were not as timely and not as accurate or as all-inclusive as we desired. So we were always dealing with half-truths.

I remember often the Army, who was responsible for keeping track of the enemy status, would get them attritted down to maybe 25-percent effective, and then they would get a bit of information and would immediately go back up to 90-percent effective. So I was always troubled by our ability to come down hard and fast.

In fact, General Schwarzkopf, in briefing Secretary Cheney as to when to start the ground war, had to use former logic. He listed each Iraqi division and then he said, "OK, we know they did not come to the battle at 100 percent. So they are about 90 percent." Then, where he had good information, where we would get a morning report from them, for example, he would say, "OK, these guys are reporting in at 60 percent today." And where we would put about maybe 500 sorties on a given division, he would say given this level of effort, they should be somewhere here between 40 and 60 percent.

That actually worked out pretty well, just using a sort of commonsense approach toward it.

But we were always frustrated by not being able to either have the enemy give us the information through various intelligence collection or by our imagery systems being able to determine the actual status. So that was the fundamental that he was concerned about.

That also led to the requirements statement about needing wide area synoptic coverage, because it was felt that this would help solve that problem.

Senator BUMPERS. It is obviously a subject that is complex. I just assumed that he was primarily concerned with the reports he was getting on what he considered to be the effectiveness of your imaging reports on what had occurred.

General HORNER. The imaging reports were one thing, but making that information into a meaningful summary was his problem. The trouble was it kept changing. That is what was very frustrating.

Senator BUMPERS. Well, I'll tell you that you would think we could learn something from that war and that that would be improved for the future.

General HORNER. I believe I learned something from that war and I am trying my best to implement those lessons.

PATRIOT

Senator BUMPERS. Let me ask you about the Patriot. You make what I think is an excellent observation here.

Our ability to intercept ballistic missiles much sooner would have been a very fine thing to have had in that war, to be able to explode Scud missiles over Iraq, rather than over Saudi Arabia and Israel.

Is the advanced Patriot designed to do that? What kind of research do we have going on to do that?

General HORNER. Of course, one of the problems is that I believed the Patriot worked. There has been a lot of discussion about its effectiveness.

Senator BUMPERS. I have heard everything but that it can fry meat as to how effective the Patriot was in that war. Some people say it was not worth a damn. Other people said it was wonderful. And some people say that it was somewhere in between.

I just don't know what to think about it. We have heard all of that to this committee.

General HORNER. Well, I was the guy that had to take it to the bank; I had every AWACS and many of my tankers, which were the long pole in the tent for the air war, stationed at the international airport and at Riyadh military airport, and that is where they were firing the Scuds at. I had to make a decision very early in the war whether to move those assets much further south, out of the Scud range, but it would have had a significant impact on our operations.

I chose not to do that after observing the Patriot in action first hand. While I may have been lucky, the results have vindicated that decision.

So coming out of that, I sat in the command post after the war and I said, What did we learn from this war? The thing I think I learned is that ballistic missile defense is going to be fundamental to future military operations.

Then, coming back here, I said everybody should know that. I found a great divergence of opinion on the subject in my dealings, going around America and making speeches. I asked why this was? I think the answer is because the threat changed. The cold war went away. A lot of the arguments involving ballistic missile defenses were associated with things like an astrodome over the United States vis-a-vis the Soviet Union, which ignored the regional battlefield.

So the question then is, What do we need? We need to be able to deploy ballistic missile defenses that will support our forces and our coalition partners in the future. I don't think there is any doubt about that.

How do you do that?

Obviously, we have Patriot and that is the only thing we have on the ground today. If we can improve Patriot, we should do so. It just makes sense.

But it still will not solve the problem of knocking down the missile overhead. Of course, all Saddam Hussein had to do was just to put uranium in the nose of those missiles—not a bomb, just poison us with reactive material. He would severely have impacted our operations. It would have taken us days to get out there in moon suits and brooms to clean all that stuff up. We probably would not have gotten it all, either.

So we have to get something that shoots it down beyond overhead, as you pointed out.

Senator BUMPERS. General let me interrupt you at that point.

TMD WARNING CAPABILITY

Do we have the warning capability to do that now if we had the missile that would knock it down?

General HORNER. We have the warning capability to do it now with the DSP provided we have the conditions we had in the Middle East, with fairly good weather and the constellation.

The DSP capability is very limited in this regard.

Senator BUMPERS. Is that a command capability? Is that a Space capability?

General HORNER. Yes, sir; it is the infrared sensor that we used during the cold war to warn us of an impending attack from Russia.

Senator BUMPERS. The E–3's do not do that?

General HORNER. The E–3's do not do that. They do not have the coverage.

We will modify our ground-based radars, the TPS–43 type thing we had in the war, the radars, to provide additional information.

We also, fortunately, because of the geometry of that war, had in our space control radars the ability to look into Iraq, which gave us also warning. That was just fortuitous.

Beyond Patriot, the first thing we have to do is have the warning capability. That is why FEWS is very, very important, because it gives us accuracies that we presently do not have with the current system, not only to warn specific locations instead of areas, but also I had forces—the way we suppressed the SCUDS, the ability we had was to suppress their operation by keeping airplanes over the firing zones. But even with that, and with the LANTIRN system, which is probably one of the most advanced night attack systems, we could not kill the Scuds. They could get them out there, get them launched, and they would get away, because we just did not have the targeting information.

That is why FEWS is my No. 1 program, as the Commander of U.S. Space Command, because it supports the warfighter as well as provide us the strategic warning we need for missile launch.

The next thing I see in the evolution is ground- and sea-based missiles that extend the range of Patriot. Of course, they will require some cuing from the space detector.

So I kind of see it as saying FEWS is like AWACS in an air battle. It provides you with the broad area coverage. Then I see us having a system that was previously developed under the Brilliant Eyes program. It is kind of like the radar in the F–15 or the F–14. It is able to look out and see the target with enough accuracy that you can target it with a longer range missile.

Then there are systems such as the Army's theater air defense system, that is a follow-on to Patriot, that would be able to go out and, given that information, hit the missile further out, hopefully over enemy territory.

But we need to work that very hard because the threat is growing.

Senator BUMPERS. What is the speed of a Scud on reentry?

General HORNER. I will have to get that for you, sir. I do not have it here.

[The information follows:]

[Deleted.]

ASAT TESTS

Senator BUMPERS. Do you know when the Russians or even the Soviet Union last tested an ASAT?

General HORNER. I don't know the exact date. I know it has been a long time. They have had a system in the barn. They have a capability which we assess them to have. But I would be less than forthcoming to say that I think they are prepared to use that on a moments notice.

Senator BUMPERS. You mentioned China, Korea, North Korea, and somebody else making ballistic missiles, theater missiles. Most of us here have been greatly concerned about China's sale of the Silkworm, for example,

Are they, in fact, selling that to Syria or to anybody else, maybe Pakistan?

General HORNER. I have no information on that.

Senator BUMPERS. You do not know the answer to that?

General HORNER. There is information and I can get it for you for the record. But I hesitate to make a statement.

[The information follows:]

[Deleted.]

TMD THREAT

Senator BUMPERS. Have we had testimony, Mr. Chairman, in this committee on that?

Senator INOUYE. No.

Senator BUMPERS. Do you know what the range of the Silkworm is?

General HORNER. The Silkworm has a fairly short range. Of course, it is designed to go against ships. It is a fairly old system. There are better systems available than the Silkworm.

Senator BUMPERS. From China?

General HORNER. Not from China. I think there have been reports of sales from the former Soviet Union countries to Iran.

Senator BUMPERS. Do you know what missile we are talking about here?

General HORNER. I would have to get that for you, sir.

[The information follows:]

[Deleted.]

ADVANCED SOLID ROCKET MOTOR

Senator BUMPERS. Are you familiar—I'm sure you are—with the advanced solid rocket motor that is being rebuilt down in Mississippi?

General HORNER. Yes, sir.

Senator BUMPERS. Is that in the NASA program?

General HORNER. It is a program supporting NASA.

Senator BUMPERS. You have nothing to do with that?

General HORNER. We have a similar program that Don might want to comment on.

General HARD. We use solid rockets that are different solid rockets than that. That is dedicated to be an upgrade for the space shuttle, a NASA program.

Senator BUMPERS. I guess that is it, Mr. Chairman. Thank you very much.

Senator INOUYE. Thank you.

GLOBAL POSITIONING SYSTEM

General, in discussing GPS with Senator Gramm, you did not bring up this Block 2, Block 2R, I believe we call it. I note that the Air Force is spending a lot of money on research and development of that.

Senator BUMPERS. What is that, Mr. Chairman?

Senator INOUYE. It is the new generation of the satellite, of the global positioning system. I gather that the major cost driver is the requirement by the Air Force that these new block 2A satellites must be able to continue to operate through a nuclear exchange. Is that correct?

General HARD. No, sir; that is not a major cost driver. It received some attention as we debated that requirement to insure that we could, in fact, operate through nuclear events. The cost impact of that is relatively minor. I will get you the exact number for the record.

[The information follows:]

No sir. That is not the major cost driver. It received some attention as we debated that requirement to ensure that we could, in fact, operate through a nuclear environment. The research and development cost ceiling for the Block IIR satellites is $136.0M. The target price for "Operate Through" research and development if $19.7 or 14.5% of the development contract ceiling.

General HARD. We have determined an approach to satisfy the requirements that were validated by the operational community.

Senator INOUYE. Is that requirement still valid?

General HARD. Well, the requirement was validated, but it would be unfair for me to say that it is a valid requirement to operate through. One needs to look at exactly what it is we asked for.

There are different levels of hardness associated with almost all of our satellites. Some of it is almost gratuitous because of the environment within which they must operate. So I would prefer to come back and try to explain to you for the record exactly what it is that we were trying to reach in terms of the level of hardness for operate-through capability. Otherwise, I might give it the wrong impression.

GPS CONSTELLATION

Senator INOUYE. Can you give us the status of the current GPS constellation, its next launch, and when you will achieve the three dimensions?

General HARD. Yes, sir.

We have just launched a GPS. So we are 1 satellite, by my count, away from having the required 24. Actually, we have another satellite in the constellation that is not operating up to par. So with the next satellite, which should be launched in the September timeframe, given some checkout time we will reach the 3D capability this fall.

General HORNER. Generally, we have 3D capability in most world coverage.

One of my jobs as U.S. Space Command is to watch the operations in Somalia and Bosnia and in Iraq and advise those commanders when they have 3D coverage and when they do not, and to provide them the support they deserve from the space services. Generally, they are pretty well covered today.

Senator INOUYE. Because of the wide commercial application of the GPS, some have suggested that maybe the Department of Transportation should bear some of the cost. Any thoughts on that?

General HORNER. This, as you know, is an ongoing debate. I do not have an answer.

One thing I might stand up for is the need for the military to be able to deny accurate GPS information to the enemy. Beyond that, I think that GPS provides great services to the world community.

Dr. QUINN. If I may, Mr. Chairman, you may know that the Department of Transportation and ourselves have recently embarked on an examination of the increase in commercial applications of GPS and how that might be accomplished and what the interests of the two sides are and how they might best be served in the future.

We set up a task force to do that. It has just come into being within the last few weeks although the agreement to do this dates back to about February or March, an agreement between the two Secretaries to get on with this. So we are examining what is the best way to operate GPS in the future and insure that both the civil applications and the military applications are both serving the best interests of each department.

Senator INOUYE. I ask that question because there, are many other instances where you people are picking up the tab while the beneficiaries or the users may be nonmilitary. At a time like this, when we have been called upon to cut down, I think it might be well to point out that Defense is picking up the tab for a lot of nondefense activities.

Dr. QUINN. This is one example of the dual-use thing.

Senator INOUYE. Maybe you should make it public and call upon Pena and say, "How about it, buddy?" Who knows?

General Horner, is Kwajalein an important part of the military space infrastructure?

KWAJALEIN

General HORNER. Kwajalein is an important part of the military space structure, particularly in launches from Vandenberg, where we use the Kwajalein area to measure warhead reentry and operations of this nature.

The reason I hesitate in even answering that is I believe we have to get the costs of space down, and I am continually asking my people to review our space infrastructure and how can we make it more efficient and how can we combine and where can we have economies and efficiencies.

So as of right now, Kwajalein is a fundamental part of our space infrastructure. But tomorrow that may not be the case. I do not want to seem to be talking out of both sides of my mouth.

Space is very, very expensive, and I think we need always to take a look at how we can make it more efficient.

Senator INOUYE. I asked that question because the Army is in charge of Kwajalein now, and I gather that the Army does not-place very high priority on this place. If that is the case, if you think it is important, should it be part of the Defense agency or the Air Force?

General HORNER. Well, as you know, the Army took a look at Kwajalein, and, of course, all of the services are under immense pressure with the declining funds. As the Army did that, I tasked the U.S. Space Command staff to take a look at it so that if the issue became imminent, I would know how to roll in on the issue, either to let it go or to fight the battle.

If, in fact, I thought it was vital and the Army somehow could not find the means to fund it, then I would go to the Air Force and expect them to pick up the tab.

Senator INOUYE. As a general rule, I try to avoid questions that may be construed as being parochial—so I will follow that rule. I have several questions here on an activity on one of the islands of the State of Hawaii, the Island of Maui, on the AMOS system.

If I may,I would like to submit these questions to you, Dr. Quinn and General Hard. I would request that you look them over and give us your response.

Dr. QUINN. I would be happy to.

General HORNER. Yes, sir.

General HARD. Yes, sir.

Senator INOUYE. It is a program that is supported enthusiastically, naturally, on the island of Maui, and they consider this to be an important part of their community. So if you would give it a hard look, I would appreciate it.

Once again, I would like to thank you for your testimony and your responses.

I find myself explaining this to all of the witnesses in recent days, but today, while we are meeting, seven other subcommittees of the Appropriations Committee are having their hearings. That is why not too many members are here.

So I hope you will not construe this lack of attendance to mean lack of interest. It is not so, I can assure you.

Your testimony will be discussed very carefully with the members of the subcommittee because the amounts involved here are not small. They are significant, and, General, as you pointed out, we are now talking about the next generation. Without these systems, we cannot long remain a superpower.

So we thank you very much.

ADDITIONAL COMMITTEE QUESTIONS

[CLERK'S NOTE.—Additional questions submitted by subcommittee members, together with the Department's responses, will appear in the appendix portion of the hearings.]

SUBCOMMITTEE RECESS

Senator INOUYE. The subcommittee will stand in recess until tomorrow at 10 a.m., in Dirksen room SD–192. At that time we will receive testimony from the Under Secretary of Defense John

Deutch and leaders of the defense industry on issues relating to defense conversion and the defense industrial base.

Thank you very much.

[Whereupon, at 11:25 a.m., Wednesday, May 26, the subcommittee was recessed, to reconvene at 10 a.m., Thursday, May 27.]

DEPARTMENT OF DEFENSE APPROPRIATIONS FOR FISCAL YEAR 1994

THURSDAY, MAY 27, 1993

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 10:08 a.m., in room SD–192, Dirksen Senate Office Building, Hon. Daniel K. Inouye (chairman) presiding.

Present: Senators Inouye, DeConcini, Lautenberg, Stevens, D'Amato, Cochran, Domenici, and Nickles.

DEPARTMENT OF DEFENSE

DEFENSE CONVERSION/INDUSTRIAL BASE

STATEMENT OF JOHN M. DEUTCH, UNDER SECRETARY OF DEFENSE FOR ACQUISITION AND TECHNOLOGY

OPENING STATEMENT OF SENATOR INOUYE

Senator INOUYE. This morning, the subcommittee convenes to review the issue of defense conversion, an issue which has been, and will be, the subject of much interest in Congress. Appearing before us this morning will be Dr. John Deutch, the Under Secretary of Defense for Acquisition. Among other responsibilities, the Secretary oversees the Department's conversion and economic security programs.

Following the Secretary's testimony, we will hear from a panel of defense industry leaders. Since the Fiscal Year 1993 Defense Appropriations Act, the Congress' interest in defense conversion has been heightened by the administration's pledge to fully address the economic problems facing our Nation.

Also, that interest has been fueled by the realization that the President's fiscal year 1994 budget request calls for greater cuts in military personnel and weapons procurement programs than were anticipated a year ago. Of course, many of us now face the prospect of witnessing additional base closures in our States.

Because this heightened interest in defense conversion comes at the time when the public is demanding greater reductions in Federal spending, the debate over how best to address the conversion problem could be more contentious this year. Nonetheless, the challenge now before Congress is to improve upon our efforts begun last year to craft a defense conversion strategy.

There are several important means to this end. First, the Congress and the administration must endeavor to reduce the confusion of all types of transition assistance and funding available. It's process was starting with the release of the recent offer technology announcement, but it must continue with the Federal agencies responsible for implementing personnel assistance and community economic development programs.

Second, we must require defense conversion programs to have objectives and measures by which to assess their performance. Conversion programs should be held to the same standards we require of other programs proposed by DOD, Department of Commerce, or, for that matter, any other agency.

Third, Congress and the administration should seek to expedite assistance to those people, communities, and businesses that need it most. Adding the regional focus to our transition assistance program will direct funds to those who can most use them.

For this year, especially, we must be particularly sensitive to the economic hardships that communities will face as more military bases are closed.

Finally, Congress should continue to fund the short-term transitional assistance program such as retraining benefits for laid-off DOD employees, but focus on programs designed to foster long-term economic growth.

In this regard, our efforts to establish and fund community economic development programs takes on even greater importance, since these programs serve as the nexus between retraining and business growth. All effort to retrain workers will be meaningless if the demand for new skill labor is not there.

Devising a balanced set of recommendations for the 1994 Defense appropriations bill will require our subcommittee to take a harder look at conversion program proposals for these reasons. As funding levels for defense decline, funds for conversion programs ultimately could come at the expense of other critical military programs.

Insufficient time has passed since the completion of last year's bill to allow for an accurate assessment of the benefits of conversion programs. There are unresolved questions regarding DOD's proper role in funding, implementing and overseeing conversion programs.

Though the subcommittee has been, and will continue to be, supportive of congressional efforts to address the defense conversion problem, I believe we must proceed with some caution.

Mr. Secretary, I know that you have prepared a written statement and it will be made part of the record. But before I call upon you, I am pleased to call upon my colleague from Arizona, Senator DeConcini.

Senator DECONCINI. Mr. Chairman, I appreciate you for allowing me to speak for just a moment. I have another committee that I must attend and make a statement. I have a number of questions, Mr. Deutch, that I am planning to submit to you.

TECHNOLOGY REINVESTMENT PROGRAM

I welcome the opportunity to do that today. I want to bring to your attention particularly a project that you may not be aware of. It is part of the Technology Reinvestment Program.

However, it is an important project to me. And I am talking about Nanoelectronics. I have worked with the chairman and members of the subcommittee staff on this issue since last year and I appreciate the tremendous job they do for all members of this committee. In last year's Defense appropriation bill, Nanoelectronics was placed inadvertently, I believe, under the commercial military integration partnership section of title 8, "Defense Reinvestment for Economic Growth."

I believe that this project more appropriately belongs in the dual-use critical technology partnership section. Nanoelectronics has a significant military use in the materializing of electronics for avionics, flat panel displays, and the like.

It also has a tremendous potential for commercial markets, although it is not commercially valid in the near future. So it appears to this Senator that the dual-use section of the technology reinvestment plan is the more appropriate vehicle for the commercialization of this program.

Mr. Secretary, I am going to submit some detailed questions here, but I particularly ask that you please look at this personally. I have talked to a number of people in the Department and get somewhat confusing answers. Perhaps it is because this is new technology. But I really think there is a misinterpretation here and if we need to make a corrective measure here, I would ask the chairman ultimately to help me do that. But I would prefer not to do that.

Thank you, Mr. Deutch.

Thank you, Mr. Chairman.

[The statement follows:]

Statement of Senator DeConcini

Mr. Chairman, I want to thank you for your leadership in conducting this hearing today. I consider defense conversion and the maintenance of a viable defense industrial base to be two of the most important issues that we face today. While we need to "jump start" the economy while protecting the industrial base, we need to determine if defense conversion, as currently envisioned, is the appropriate vehicle to make that happen.

I am pleased to see that a representative from Hughes, one of Arizona's major employers, and one of the few growing companies in my state, has been invited to provide testimony today.

Dr. Deutch, I also welcome you here today. You have a challenging task ahead of you. You come into this position at a critical juncture in our history. We in Congress recognize that we must downsize the defense industry. But we have many questions about how we can do that "smartly." For instance, how do we go about it without destroying the industrial base, and how do we keep all of the men and women who helped defeat Communism gainfully employed now that the threat has disappeared and their services to the Department of Defense are no longer needed, but the need for their service to the nation remains?

The basic premise of defense conversion seems to answer these questions. However, as the process continues to evolve, I have heard complaints from constituents in small to medium sized Arizona companies that—while they are most effected by DOD downsizing—they are unable to participate in this program due to the cost sharing requirements. In nearly every instance, they have been told by representatives from ARPA that they need to tie themselves to consortia that have the ability to directly share costs. Sometimes this just cannot happen. I do not question the overall utility of the program, however, I just want to make sure that smaller, innovative companies have a chance to play in the defense conversion program.

I look forward to working with you on this and other issues.

Senator INOUYE. Senator D'Amato, do you wish to make a statement before I call on Mr. Deutch?

Senator D'AMATO. Mr. Chairman, I just commend you for calling the hearing and say that this obviously is an important area. It is important to my State in particular and to my local region, Long Island, which will probably be very hard hit unless we have some good conversion that can help cushion the blow.

So I thank you for calling the hearing.

Senator INOUYE. In fact, on the next panel, your constituent will be here.

Mr. Secretary, with that, welcome again to the committee. Your first appearance was most helpful and I look forward to another helpful session.

STATEMENT OVERVIEW

Mr. DEUTCH. Thank you very much, Mr. Chairman. I am pleased to appear before the subcommittee to discuss defense conversion technology, reinvestment, and the technology base.

I am aware of the leadership of this subcommittee in these important areas. I thought that what might be most helpful is if I spent a few moments describing the framework that Secretary Aspin, Deputy Secretary Perry, and I used to approach these subjects that are under consideration here today.

Before proceeding, let me just reply to Senator DeConcini that I will return and I will look into this question of the Nano Electronics and I will reply to you on that specific point, sir.

Mr. Chairman, the end of the cold war has not meant that the United States does not face very serious security challenges. Iraq and Bosnia illustrate this. It also illustrates that very different levels of forces and mixes of forces will be needed to meet our future security challenges.

Accompanying this is a welcome reduction in the amount of resources that this Nation, over time, must devote to defense. Unfortunately, there are very severe economic hardships for people, for communities, and for individuals and firms during this decline of defense outlays.

Both President Clinton and Les Aspin have a personal interest in the economic security aspects of the adjustment of our economy to this downturn in defense spending. Helping people in communities with programs aimed at easing the impacts of spending cuts is important for this country and important for our Department.

Creating the opportunity for economic growth and high-quality jobs in the private sector that will replace the lost jobs in the defense sector is also important for the Nation.

At the same time the defense budget is declining and it is anticipated to do so over the next 5 years, President Clinton and Les Aspin have placed first authority in this time of a declining budget to maintaining a ready force, a force that is able to fight and meet any of the security challenges that our Nation confronts, and avoiding a hollow Armed Forces.

If we have a declining budget and if there is a commitment, a priority commitment to maintaining a ready force, it obviously means that there will be particular pressure on the Department of Defense investment accounts, research and development, and procurement.

Accordingly, if we are going to have resources for modernization over the next several years, money must be found separately in more efficient operations of the Department's activities to provide resources for modernization. There are ways, in my judgment, to accomplish this.

One is to reduce the infrastructure expenditures of the Department and the second is to acquire the necessary products and services that we need for the defense system more efficiently through acquisition reform.

There are many different aspects of acquisition reform needed more urgently as the defense budget declines and the need to make greater use of commercial products and services in the Department of Defense activities.

One aspect of doing so is to place emphasis on dual-use technologies which will simultaneously meet the needs of the private commercial world and, more importantly, the military needs of the Department of Defense.

We see the emphasis on dual-use technology and economic reinvestment as an integral part of the strategy of meeting more efficiently the security needs of the Department of Defense.

Before turning to a greater discussion of defense reinvestment, Mr. Chairman, I would like to make a few remarks about the transitional programs that you mentioned in your opening comments, the importance of the transition assistance programs for people and for communities.

The fiscal year 1994 budget that is in front of you for consideration and the personnel assistance programs increases proposed expenditures from $409 to $555 million, covering many of the subjects which this committee has been interested in in the past.

For community assistance programs in fiscal year 1994, there is a request for $138 million targeted toward assisting communities that will be impacted by the BRACC closings to deal with the difficult planning requirements, the planning needs, to help these communities reach more adjustments—necessary adjustments more rapidly.

The fiscal year 1994 request for community assistance is below that of fiscal year 1993 for three reasons. Fiscal year 1993 contained programs that were not continuing efforts of the Department; for example, $80 million of funds were for the Economic Development Administration. Several other programs in the fiscal year 1993 budget were for 2-year programs to undertake new efforts.

So we have an increase in the personnel programs in fiscal year 1994 and a decline in the community assistance programs, but not in that aspect of the community assistance projects which are key to this transitional program of assisting communities that are impacted by BRACC base closings or by reductions in defense programs.

Let me return for a moment to make some remarks about the dual-use technology, the defense reinvestment programs of the Department of Defense. As I have said, Mr. Chairman, our effort here is to support technologies that are common both to the defense and commercial sectors and that will lead to more efficient acquisition of goods and services that are needed by the Department of Defense.

We also believe that making these technological investments will contribute to the long-term economic growth of the Nation and replace jobs lost in the defense sector with other high-quality jobs.

In my judgment, the dual-use technology programs that are before Congress are intended to be a win-win situation. They are not intended to sacrifice defense capability in order to provide assistance to the commercial sector. They are intended to select technologies that are common both to the defense and to the commercial sector and provide progress in that way.

Let me just briefly mention the principles that guide us in formulating these dual-use technology programs, these defense reinvestment programs.

The first is that technology must be relevant to defense. The second is that industry must be involved in the planning of these dual-use programs and their interest has to be reflected in cost sharing in most of the important programs to indicate that they share the same judgment as do the Government sponsors in the importance of the technology.

And third, these programs in the Department of Defense do not go forward without being coordinated with other Federal agencies where appropriate; for example, the Department of Commerce, National Science Foundation, the Department of Energy, and NASA have been involved in the very recent and successful technology reinvestment project mentioned in your opening remarks.

And finally, I share the comment that you made that these programs must be continuously evaluated to assure that measurable progress is made toward the goal of meeting military needs and generating technology and jobs in the commercial sector.

Let me conclude by saying that there are certain aspects of the dual-use technology and defense reinvestment programs that should not raise false expectations. One, these programs will not offset all of the short-term employment effects of the defense spending downturn. It will take a long time before these defense reinvestment projects lead to opportunities to replace jobs in the private sector.

Second, we cannot count on meeting all defense needs through dual-use or defense reinvestment programs. There are programs of importance to the military might of this Nation which will have to be met by defense unique efforts. I would just note three examples: fighter aircraft, nuclear aircraft carriers, and nuclear submarines. We are not going to find dual-use technologies appropriate for these very critical aspects of our defense needs.

And finally, let me say that dual-use programs and defense reinvestment programs that are under consideration here today are not going to benefit equally all the firms that are involved in our defense enterprise. The firms that are likely to benefit most are smaller firms that are involved in the component and subcontract level.

Large aerospace firms that are systems integrators have an important and vital role to play and will not have the same view of these programs as a larger range of firms in our community.

Thank you very much for your attention, Mr. Chairman. I would be happy to answer any questions that you may have.

[The statement follows:]

STATEMENT OF JOHN M. DEUTCH

Mr. Chairman and distinguished members of the Subcommittee, I welcome the opportunity to appear before you today to discuss the defense technology and industrial base and the Department of Defense's programs and plans for defense reinvestment and conversion. I am especially pleased to be before this Subcommittee because of the important contributions that you have made in these areas. Before I discuss our defense reinvestment and conversion programs, I would like to highlight the philosophy that guides our approach.

The end of the Cold War has not meant that the United States does not and will not face serious security challenges. On the contrary, the Gulf War and current situation in Bosnia illustrate the types of challenges we face in the future. As Secretary of Defense Aspin has noted, the United States still faces regional threats to U.S. interests, the proliferation of weapons cf mass destruction, the possible failure of democratic reforms, especially in the former Soviet Union, and continued poor economic performance at home.

Meeting these threats will require a very different mix and level of forces compared to what was necessary during the Cold War era. The Department is conducting the Bottom-Up Review to determine our plans for a new mix and new force levels.

In general, the new security environment will bring a welcome reduction in the amount of resources that the nation must devote to defense. Wise reinvestment of defense resources will lead to higher levels of economic growth in the long run. Spending less on defense also means that resources we have been devoting to preserving national security can be reallocated to other productive purposes in the public and private sectors.

In the short run, however, shifting resources from defense will create economic hardship. Thousands of military personnel, Department of Defense civilian employees, and defense industry workers will have to find new employment. Communities with closing or shrinking defense installations or defense contractors will have to attract new sources of economic livelihood. Defense companies will have to find new markets, shrink to match a smaller defense market, or merge with other firms to remain competitive. These effects are evident today.

Both President Clinton and Secretary of Defense Aspin have placed a high priority on our nation's economic security and ensuring a smooth adjustment to lower levels of defense spending. The Administration is pursuing a two-pronged approach to address the economic hardships that will accompany reductions in the defense budget. First, we are helping people and communities with programs aimed at easing the impacts of defense spending cuts. Second, we are pursuing a range of programs to create opportunities for economic growth and high quality jobs in the private sector to replace jobs lost in the defense sector.

The defense budget has been declining since 1985, and the Administration's budget plans continue budget reductions, although at a more moderate pace, over the next five years. President Clinton and Secretary Aspin have placed the first priority in this time of declining budgets on maintaining readiness and avoiding a "hollow force." As resources are dedicated to maintaining force readiness, however, pressures will mount on DoD's investment accounts, which pay for procurement and research and development.

If the Department is to have sufficient funding for modernization over the next several years, we must free up resources by operating more efficiently. Acquisition reform and reducing our infrastructure by shedding excess capacity are two areas in which we have significant opportunities for gaining efficiencies.

The Department is addressing infrastructure questions on several fronts, including the base closure and realignment process as well as the ongoing Bottom-Up Review.

As Under Secretary of Defense for Acquisition reform of our acquisition system is one of my highest priorities. Let me expand on this subject.

ACQUISITION REFORM AND COMMERCIAL-MILITARY INTEGRATION

A key goal for acquisition reform is to increase DoD's reliance on the broader national industrial base to meet defense needs. This is a radical break with the past, in which DoD depended on a separate defense industrial base to meet defense requirements. This fundamental change is essential because as the defense budget declines, the Department can no longer afford to maintain a separate industry dedicated solely to defense.

There are three sets of actions that are required in order to achieve this goal. First, DoD must change the way it does business to resemble more closely the practices of our nation's most successful private companies. We have to improve our entire acquisition operation, from top to bottom.

Second, we must reduce the tangle of rules, regulations, and statutes that have been put into place over the years to protect the taxpayers' interest, but, over time, have led to a separate, cumbersome, and expensive acquisition system. The Department is taking early steps to make those improvements that can be made within current legislative authority and will develop and submit proposals for needed legislative changes. I am convinced that we can remove many of the burdens imposed by the current system and continue to ensure that we spend the taxpayers' dollars wisely and responsibly.

Third, we must encourage dual-use technologies that have important payoffs for both the military and the commercial sectors.

DUAL-USE TECHNOLOGIES

Our emphasis on dual-use technologies is motivated by two objectives. Supporting technologies that are common to the defense and commercial sectors will lead to a more efficient acquisition system for the Department. In addition, investments in dual-use technologies will contribute to long-term economic growth and high quality jobs to replace those lost to declining DoD expenditures. Dual use is a win-win proposition: the Defense Department and the nation's economy will benefit.

Four principles guide our dual-use technology programs. First, technologies developed under these programs must be relevant to defense. This is not as great a hurdle at it might appear at first glance. Many key defense technologies are also important for industrial productivity in the commercial sector. Examples include advanced materials, electronics, and information technologies.

In addition, greater dual-use efforts will allow the Department to take better advantage of the state-of-the-art in commercial technologies. In many areas of importance to defense, commercial technologies and capabilities exceed those of the DoD. Fostering dual-use technologies improve our ability to incorporate the best commercial technologies into defense systems.

Second, we are actively involving industry in the planning of dual-use programs. Industry must be involved not only in the planning, but also in the decisions regarding which projects have significant commercial potential. Cost sharing is therefore an important ingredient in these programs. Cost sharing brings business judgment from the private sector to bear on dual-use investments. Firms will invest their own capital in these projects only if they expect commercial success and a reasonable return.

Third, dual-use programs are being designed and implemented in cooperation with other Departments and agencies. DoD has been working closely with the White House National Economic Council and the Office of Science and Technology Policy to coordinate programs and avoid wasteful duplication. Inter-agency cooperation is also the hallmark of the successful Technology Reinvestment Project, which brings together DoD's Advanced Research Projects Agency, the Department of Commerce, the Department of Energy, the National Aeronautics and Space Administration, and the National Science Foundation.

Fourth, we will evaluate dual-use programs to assure measurable progress toward the goal of generating technology and jobs and contributing to the national defense.

Before moving on to the specifics of our defense reinvestment and conversion programs, I would like to clarify some common misunderstandings about our dual-use efforts. The Department recognizes that these programs will not be of a size that will offset the short-term employment effects of reducing defense spending. However, the programs will leverage additional resources and develop technologies that will increase productivity and create high quality jobs over the long term. The Department is also keenly aware that the dual use approach can not be relied upon to meet all defense needs. There are some requirements, such as those for fighter aircraft and nuclear-powered submarines, that are unique to defense. The Department must sustain the vitality of those portions of the industrial base that are truly defnese-unique and essential for meeting future security needs. Finally, the Department understands that dual-use programs are more likely to benefit the subcontractors and manufacturers of components and subsystems than they are the large aerospace prime contractors, who specialize in the integration of complex systems.

PRESIDENT CLINTON'S DEFENSE REINVESTMENT AND CONVERSION PROGRAMS

Let me now turn to the specifics of our programs. On March 11 in Baltimore, President Clinton announced the Administration's defense reinvestment and conversion programs. In his speech, the President noted that defense conversion will not be easy, but the alternatives--to cut defense without an effective defense conversion program, or one that is too localized or too limited--are unacceptable.

The Administration is aggressively implementing the Defense Conversion, Reinvestment, and Transition Assistance Act of 1992, which laid the foundation for our defense conversion programs. For example, we have already released $230 million in DoD funds to support the defense transition programs of the Departments of Labor, Commerce, and Veterans Affairs, as required by the law.

I would like to describe briefly the programs that the Department is pursuing for people, communities, and the technology and industrial base.

People

DoD is implementing numerous programs to help people affected by the drawdown. We are trying to minimize involuntary reductions in force (RIFs) in the Department by offering retirement and resignation incentives to selected civilian personnel and retirement benefits to selected military personnel with between 15 and 19 years of service. We are also continuing the highly successful Voluntary Separation Incentive and Special Separation Benefit programs to encourage voluntary separations of career military personnel.

The Department has also increased its efforts to provide retraining and other employment services. We released $75 million to the Department of Labor to provide retraining and employment services to separating military personnel, DoD civilian employees, and private sector defense workers. We also released $73.5 million to the Department of Veterans Affairs and $1.5 million to the Department of Labor to implement the Service Members Occupational Conversion and Training Act, which will provide training to veterans. In addition, we are implementing transition assistance programs for members of the National Guard and Reserve and are working closely with state employment agencies, the Department of Labor, and the Department of Veterans Affairs to provide employment information to separating personnel.

The President's fiscal year 1994 budget includes $555 million for personnel assistance programs.

Communities

For over 30 years, DoD has worked with communities to ease the effects of changes in defense spending. During the drawdown, this mission takes on increased importance. Many communities will lose key sources of economic strength through reductions and closures of bases and defense plants. The Department plans to increase significantly its community adjustment and revitalization efforts.

For 1993, DoD has tripled the budget of its Office of Economic Adjustment (OEA), which works closely with other federal, state and local government agencies to assist communities. OEA funding for 1993 is about $30 million. The Department has also released $80 million to the Economic Development Administration of the Department of Commerce to support business development, public works, technical assistance, or almost any other eligible activity identified in each affected community's adjustment plan.

DoD is also increasing its community assistance efforts in three important ways. First, the Department is developing programs to place qualified separating defense personnel in community and public service jobs. Second, we are implementing and expanding community service programs such as the National Guard Civilian Youth Opportunities Pilot Program and programs that help meet critical needs in the nation's high schools. Third, we are making a concerted effort to speed-up the environmental restoration process at closing facilities. By doing so, we will ensure that environmental clean-up does not become a barrier to communities' rapid reuse of closing installations. A new position of Deputy Under Secretary of Defense for Environmental Security has been created to place increased emphasis on environmental issues.

DoD's 1994 budget includes $138 million for community adjustment and assistance programs. DoD funding for community programs in 1994 is lower than it was in 1993 because some 1994 program responsibilities will be funded directly through other Departments and agencies, rather than through DoD as was done in 1993, and because the 1994 budget does not include some one-time programs for 1993.

The Technology and Industrial Base

The Defense Conversion, Reinvestment, and Transition Assistance Act of 1992 created a number of new programs for the technology and industrial base that the Department is implementing aggressively.

The Administration recently established the Defense Technology Conversion Council (DTCC), which includes DoD's Advanced Research Projects Agency, the Department of Energy, the Department of Commerce, the National Science Foundation, and the National Aeronautics and Space Administration. The DTCC created and is carrying out the Technology Reinvestment Project (TRP). TRP programs are designed to stimulate the transition to an integrated, national industrial capability that provides advanced military systems and competitive commercial products. These programs will develop dual-use technologies, provide manufacturing and technology assistance to small businesses, enhance U.S. manufacturing skills, and assist displaced defense industry workers.

The TRP is a revolutionary program in many respects. The TRP is unique because it:

- results from unprecedented cooperation among Federal Departments and agencies,

- ensures that industry is actively involved in shaping the program,
- addresses the broad spectrum of essential technology and industrial base programs, from technology development to deployment to manufacturing education, and
- recognizes the diversity of the defense industrial base by focusing specific programs on the needs of small defense businesses.

On May 14, the DTCC released a formal solicitation for proposals for the TRP. In the weeks preceding release of the solicitation, the DTCC traveled to New York, Detroit, Orlando, Dallas, Los Angeles, St. Louis, Boston, Albuquerque, Hartford, Denver, Seattle, Nashua, Little Rock, Philadelphia, Ann Arbor, and Oakland to present information conferences for prospective participants in TRP programs. These conferences were successful by any measure and were well attended: over 5,000 people participated. The deadline for proposal submissions is July 23, 1993, with awards planned before September 30, 1993.

Including ongoing efforts, technology and industrial base reinvestment and conversion programs total $1.6 billion in 1994.

CONCLUSION

I have concentrated on DoD's programs, but other Departments and agencies also have important defense reinvestment and conversion programs. We look forward to continuing to work closely with other federal, state, and local government organizations to develop and implement effective defense transition programs.

Let me conclude by emphasizing two points. First, it should be clear that effective defense reinvestment and conversion programs meet the needs of our national defense, our technology and industrial base, and our national economy. When we ease the transition of people, we speed their reentry into the labor force. When we help communities adjust to reduced defense spending, we help spur economic growth. When we pursue dual-use technologies and commercial-military integration, we allow DoD to purchase better products at lower cost and help the economy.

Second, I would like to stress the importance of your support for the President's 1994 budget for defense reinvestment and conversion programs. As you know, the previous Administration did not implement most provisions of the Defense Conversion, Reinvestment, and Transition Assistance Act of 1992. The Clinton Administration came into office deeply committed to implementing the Act. Although we had a late start in 1993, we are implementing the Act as quickly as we can, consistent with the dictates of sound management. We will need all of the resources you provided for 1993, as well as those requested for 1994.

Thank you for the opportunity to discuss the defense technology and industrial base and our defense reinvestment and conversion programs with you today. I stand ready to answer any questions you might have.

WHO'S IN CHARGE?

Senator INOUYE. Mr. Secretary, thank you very much. Senator Stevens and I decided to hold this hearing not because of the funds involved, because the funds in and of themselves are not huge when compared to other elements in the DOD budget, but it is the human equation involved. I must be very candid because of confusion.

For example, one of the major complaints that my office has received from colleagues and from community leaders and from industry leaders is the lack of policy guidance and lack of information relating to conversion programs. As several of them put it, where do we go to get information? Do we go to the Labor Department? Do we go to Commerce? Do we go to Defense? If so, who do we call upon?

Apparently, there is no central office where interested mayors or governors can call upon. Do we have any central office?

Mr. DEUTCH. Mr. Chairman, we do have a central office. We have been very clear in the Department about our need to have a central location where impacted communities, whether it is from loss of defense contractors or from the base closure process can go, where groups that are concerned with personnel assistance programs can go, and groups which are also interested in participating in the technology reinvestment efforts.

We have tried to focus that in the Office of Economic Adjustment in the Department, which is the Office which has the resources to provide planning assistance to communities, and in an outreach committee chaired by Joan Kelly Horn, who is intended to visit these communities and provide one-stop shopping for those communities that are interested in determining personnel assistance, community assistance, or technology reinvestment opportunity.

You are quite right, though, in saying that it is absolutely critical for the Department of Defense to maintain its credibility and its effectiveness to have one place which everybody knows to go to pursue these areas.

Senator INOUYE. I realize we have not had much time to implement some of the programs. After all, you have been in business for just about 4 months now, and we cannot expect miracles to occur in 4 months, but I think it might help if we are able to, as you say, carry out your outreach program and get out into the communities because they are desperate, especially if they see their bases on the list.

Do you think that other departments should be bearing some of the cost?

Mr. DEUTCH. I believe that there are other departments. Let me notably mention the Department of Labor, the Economic Development Administration of the Department of Commerce, and the Department of Housing and Urban Development which have a very important role to play in helping the communities and our people adjust to these dislocations.

There is an effort underway under the leadership of the National Economic Council, to assure that the interagency aspects of these assistance programs are brought together in a coherent manner. So, the same remark you made about one-stop shopping within the

Department of Defense certainly applies to the interagency issue about who is providing assistance, at what time, and in what place, and under what circumstance.

Here, again, I think that it is terribly important that we have a way to speak to communities with one voice.

Senator INOUYE. Are we preparing ourselves for that?

Mr. DEUTCH. I think we are preparing ourselves for that.

Senator INOUYE. When will it be ready for operation?

Mr. DEUTCH. Well, we are trying to do it every day. We have communities from every part of the Nation coming in and discussing with us the impacts that they are feeling, the very human impacts that they are feeling.

MEASURES OF SUCCESS

Senator INOUYE. We, being politicians, are constantly asked the question, Do we have any successes for spending over a billion dollars? How do you measure success, the number of jobs?

Mr. DEUTCH. The way I would like to measure success is to find that this program has generated businesses which sell products needed to the Department of Defense and in the private sector in a very successful way, and they build an integrated system which will allow them to develop new products and new technologies, and create jobs, and sell them both in the commercial sector and to the Department of Defense and the Government generally.

Of course, to reach this kind of a state will require not only success technologically, but a very significant change in the rules about how the Department of Defense does business with its suppliers.

FUNDING CONVERSION PROGRAMS

Senator INOUYE. We noted in your 1994 request that some of the conversion programs which began last year are not being funded, such as the Troops to Teachers Program, the Job Bank, and the Civilian Community Corps. Why is that? These are failures?

Mr. DEUTCH. Excuse me, sir?

Senator INOUYE. Are these programs failures?

Mr. DEUTCH. No; they are certainly not failures. The prior administration, I think, in the first 3 months of the last fiscal year had not taken a lot of initiative in these areas, and we are currently moving very expeditiously to define these programs and to start up some projects in these areas.

I would be more than happy to provide for the record exactly what the status is in the cases of Troops to Teachers and other programs that have been considered, every single one of the ones which were in last year's legislation. We are prepared to do that.

[The information follows:]

STATUS OF DEFENSE CONVERSION PROGRAMS

The status of the defense reinvestment and conversion programs funded in the fiscal year 1993 Defense Appropriations Act is currently as follows:

Community economic adjustment assistance through the Economic Development Administration.—The Department released $80 million to the Economic Development Administration of the Department of Commerce in March 1993.

Temporary health transition assistance.—The Department is providing temporary health transition assistance.

Department of Defense civilian personnel transition initiatives.—The Department is offering retirement and resignation incentives to selected civilian employees. To date, about 22,000 offers have been accepted. These incentives have reduced significantly the need for involuntary reductions in force.

Defense efforts to relieve shortages of elementary and secondary school teachers and teachers' aides.—The Department is implementing a program to train former defense employees and military personnel to become teachers and teachers' aides and to help pay salaries for two years to local education agencies that hire them.

Environmental education and retraining programs.—The Department is finalizing plans for these programs and plans to solicit proposals and applications during Fall 1993.

Job training and employment and educational opportunities.—The Department released $75 million to the Department of Labor in April 1993.

Service Members Occupational Conversion and Training Act.—The Department transferred $75 million to the Departments of Veterans Affairs and Labor to carry out the programs mandated by this Act.

Active forces transition enhancements (temporary early retirement authority).—The Department is offering retirement benefits to selected military personnel with between 15 and 19 years of service. The military services estimate that they will accept 1,600 early retirements in the 1993 fiscal year and between 10,000 and 12,000 in the 1994 fiscal year. These are preliminary estimates that could change.

Guard and Reserve transition initiatives.—Transition initiatives for members of National Guard and Reserve units are being implemented.

Job placement assistance and career training.—DOD is planning implementation and funds will be released shortly.

National Guard Civilian Youth Opportunities Pilot Program.—In May 1993, standards and procedures for selecting participants were prescribed and on June 11, President Clinton directed DOD to release $57.5 million for this and other pilot programs to help youth at risk and medically underserved communities. The ASD(RA) and the Deputy Director, Office of National Service announced that 10 states had been approved to participate in the pilot program. The states are Arizona, Arkansas, Connecticut, Georgia, Illinois, Louisiana, Maryland, New York, Oklahoma, and West Virginia.

Civilian Community Corps and other programs of the Commission and Community Service.—The Department released $40 million to the Commission for these programs in April 1993.

Philadelphia Naval Shipyard economic conversion initiatives.—The Department is working with the city of Philadelphia to implement this provision of the legislation.

Dual use critical technology partnerships, commercial military integration partnerships, Regional Technology Alliances Assistance Program, defense advanced manufacturing technology partnerships, manufacturing extension programs, manufacturing engineering education programs, and Defense Dual Use Assistance Extension Program.—These programs are being executed as part of the Technology Reinvestment Project, a joint effort by the Department's Advanced Research Projects Agency, the Department of Commerce, the Department of Energy, the National Science Foundation, the National Aeronautics and Space Administration, and the Department of Transportation. A solicitation for proposals was released on May 14, 1993. Proposals are due by July 23, 1993, with selections planned for the final quarter of this fiscal year.

Agile manufacturing and enterprise integration.—DOD's Advanced Research Projects Agency is reviewing proposals for enterprise integration networks. A solicitation to develop industry forum activities and agile manufacturing research institutes has been published. Plans for soliciting proposals for pilot demonstration projects are being developed.

Advanced materials synthesis and processing.—DOD's Advanced Research Projects Agency is in the process of making awards under this program.

United States-Japan management training.—DOD is currently reviewing proposals for this program.

Senator INOUYE. One of the major concerns of service leaders is that this program, like other so-called nonmilitary-type programs, may be at the expense of readiness. Can you assure these men and women that it is not so?

Mr. DEUTCH. Absolutely, Mr. Chairman. My comments started off by saying that the highest priority for the Defense Establishment is to maintain readiness in a time of declining budget. President Clinton and Secretary Aspin have made it absolutely clear that readiness will not be sacrificed for any aspect of the defense budget in the coming years.

So, I think that you can rest assured that that priority objective has been clearly stated by the President and by the Secretary. But I would also say that the personnel assistance and the community assistance programs that we are speaking about in the Department of Defense are not enormous. They are not enormous in relation to the whole budget, and they are very important for maintaining public respect for the Department of Defense as being a responsible and realistic member of the community.

You just do not cut back your programs and disappear for either people or places. This is a modest, it seems to me, request in relation to the overall budget, and it does not sacrifice, in my judgment, readiness.

SCHEDULE OF CLOSURES

Senator INOUYE. I have many, many more questions and will come back again, but another area of concern to my colleagues and community leaders is the perception that DOD is unable to move forward expeditiously in making these closed spaces available. I try to point out that they have to be cleaned up, they have to go through certain processes, but even I do not know why.

It would help, for example, the base in Hawaii being on the schedule for closure, if somehow we could get some information saying that the cleanup here may take 18 months, and thereafter the process of determination as to how the property will be dispensed will take another 6 months. So, in 24 months you can count on this property being transferred so these city leaders and State leaders can make plans.

Do we have any information of that nature? For example, Charleston is on the list. If Charleston is closed, can the people or the mayor of Charleston be advised that in 3 years this will happen, in 3½ years that will happen?

Mr. DEUTCH. I do not believe that one can set an absolutely confident schedule. But I am very familiar with the problem that you mention. We are taking two, I think, quite significant actions to try and repair it not only with candidate bases which are on the BRACC III closure list but other bases which have been announced in prior years and where successful transition has not yet happened.

The two need to move more expeditiously on understanding and dealing with the environmental requirements. As importantly, we need to be more forthcoming on future owner indemnification to environmental issues that have existed on the base. So, I think the indemnification issue is almost as important as the question about the cleanup of existing, identified environmental hazards.

Senator INOUYE. We are willing to work with you to resolve that problem.

Mr. DEUTCH. Yes; I appreciate that, Mr. Chairman. We will be coming forward with some legislation I believe quite shortly to clarify the authorities we have in this area of future owner indemnification.

I believe that it is unconscionable for us to close these bases and then not to have an effective and expeditious program for turning these bases over to productive use for our economy, and that is a very serious matter which Bill Perry and Les Aspin and I are all quite concerned about.

Senator INOUYE. Thank you very much, sir.

Senator Stevens?

Senator STEVENS. Thank you. I am sure that we need to have as much Federal involvement in terms of the financing as in terms of reviewing our systems to see what can be adapted to civilian use while maintaining a reduced industrial demand.

For instance, the other night I went over to the House side and looked at a whole series of demonstrations, some of our staff was over there, of the global positioning system [GPS] and how it has been adapted now to civilian use. We saw the San Francisco ambulance dispatch system. We saw the adaptation of this into the general aviation aircraft through the FAA and some of the very alert people that are supplying aviation equipment. There is really a revolution going on using GPS, and it is very cost effective. And at the same time, the military maintains its demand, as I said, although on a reduced basis.

ADAPTING CLOSED BASES TO CIVILIAN USE

Now, that led me to wonder why should we not be reviewing systems we have to see how rapidly they could be adapted to civilian use. I have been in contact, for instance, with some of the people in the fishing industry. My State has one-half the coastline of the United States and catches more than one-half of the fish of the United States off our shores at least.

They tell me that a lot of the systems that were used by the Navy and the antisubmarine warfare system would be adaptable to fisheries, not just from the point of view of finding and identifying the biomass that they are trying to recover a portion of, but in terms of simulation, in terms of controlling various projects, in terms of fisheries resource management, and yet there is not access to those systems. They are still totally classified.

Now, can you tell me, are we going to review those systems that are still in use and still in demand for the services and have a viable military need, like GPS, to see if they can be adapted to civilian use so we can reduce the cost to the Government of what we are going to acquire on an ongoing basis, and at the same time develop new industries in the civilian sector?

Mr. DEUTCH. Senator Stevens, your point is exactly valid, and I regret very much that I did not properly stress in my comments about dual-use technology that we are not only looking for new technologies in the outside world, but we should be equally interested in exporting defense technologies out as well as importing technologies in.

Senator STEVENS. You cannot do that with rigid classifications that have no further need. That is the problem. I mean, even GPS, if we had not really bent the system that was in place at the time GPS would still be a classified system for position use and munitions. And we cannot go much further than that right here, but you know what I mean. And now we have got a very viable industry out there.

Mr. DEUTCH. Senator, I would also like to report to you that in a particular area of use of satellite information of all kinds for commercial and scientific application, that as a result of the initiatives of Congress last year there has been some work on just this point with very promising and exciting results about how. If we manage to release this information in a way that does not compromise sensitive sources or impair the military value, that they would indeed lead to very great interest in the private sector. I think there is an exciting story there that should be pursued and, in fact, a considerable amount of work has been done as a result of the effort provided last year.

Senator STEVENS. Well, I think there should be a special commission on joint use and licensing, and we ought to get this technology out there and just dangle it in front of this fantastic, innovative community we have. That technology will tumble and will be improved if it can go out in the private sector more rapidly.

Let me go on to another thing. Former Senator, former Governor Bellman came in to see me the other day. He told me that at Tinker Air Force Base there is a vast need out there of some of these smaller commercial enterprises for space and the use by the Air Force of that base is being diminished. And he has a group from the university that wants to explore the concept of having cotenancy before bases close that there is a revenue base for the Government and a sharing of industrial use of some of those facilities. Have we explored that?

Mr. DEUTCH. I think that we are very interested in having noninterfering use on our military bases. I would be more than happy to talk to former Governor, former Senator Bellman. I know the gentleman, sir. I would be happy to look into that particular point, sir.

I know he is very interested in Oklahoma University's prospering down there and I have spoken with him about it. I would be happy to do so.

Senator STEVENS. Well, it seems that may be a pilot program that would make a lot of sense in developing a commercial market that would not be really offensive to the ongoing military needs.

Mr. DEUTCH. As long as it is not interfering with the operation of the base I think there is something that we could do there. I would be happy to talk to Senator Bellman.

FUNDING DEFENSE CONVERSION ACTIVITIES

Senator STEVENS. We have got a lot of people coming. I do not want to take up a lot of time. I will give you some of the questions we have talked about, my staff and I, but one of the problems I have with this program that we are trying to work together on is that the consulting firm of Booz, Allen & Hamilton said that up to 75 to 80 percent of the 9,000 prime defense contractors that probably will leave the market in this decade really have no markets to go to. And it appears that we are going to set up a program, if we are not careful, that will really be another entitlement program.

We have got $519 million for personal assistance programs, $178 million for community adjustment and assistance. Last year we appropriated $353 million for the first one. It has gone up to $519 million in the request this year. Now, that is personal assistance. That involves just writing a check to displaced workers or management people, does it not?

Mr. DEUTCH. No, sir; I think most of that money is targeted for servicemen and civilian Government employees who are leaving Government service.

Senator STEVENS. Well, are we looking to create an ongoing existence from the entities that are going out of the market, or are we trying to create a system where new entities would come in and offer jobs and opportunities for those that leave this market?

COORDINATION OF DEFENSE CONVERSION PROGRAM

Mr. DEUTCH. In my judgment this is not an entitlements program. Certainly, the technology reinvestment piece, sir—I would be very concerned, myself. I can assure you I would share anybody's concern about making it into an entitlements program.

There are two hallmarks to it. It has to be cost shared by industry, to show that they are as concerned with these opportunities as we are, and second, it has to be based on competition, not on formula grants to any industry or any area in our judgment.

So, I would share the view that these are opportunities for firms which see that they are going to be displaced, or other firms that see that they have a contribution to make. Their involvement requires cost sharing and it is competitively managed, sir.

Senator STEVENS. I share the chairman's concern in his question about coordination of this program. I do hope, eventually, that it has some center for coordination in the Office of Science and Technology Policy at the White House. I think there is going to have to be really Presidential involvement to have the ability to take some of the fetters off of this system that come about because of this longstanding overclassification fetish of ours, in terms of some of these industrial processes.

So I repeat that. But I would also hope that we would find some way, in terms of developing this, that we can reach out to the whole system. It is almost like someone ought to have a community bulletin board on a computer system out there—these computer whizs—of some of the things we have developed. I do not think that we have shared a lot of the technology that the taxpayers have financed. And I am convinced that there is just an insatiable market for those.

So I would like to work with you, and I think this committee would like to work with you, to try and see if we can guide this program toward the creation of new demand, new products, and new adaptation of our existing products as being one of our major goals.

And it is nice to have you here. I appreciate your help.

DUAL-USE SUCCESS STORIES

Senator INOUYE. I would like to point out that I concur with the vice chairman. One of the great success stories that we have been able to use to support NASA has been teflon. Do we have any teflons in the technology that we are developing?

Mr. DEUTCH. We do have materials. I do not know that they will be as successful as teflon. But there are examples. Kevlar, I think, is another one. The polycarbonates are very high-quality materials that have been brought in, just like teflon was, for new applications. I could speak to you for quite some time—I am a chemist myself—about teflon and how that happened. But I do think we have examples like that, sir.

JOINT COMMERCIAL VENTURES

Senator STEVENS. If you would yield, Mr. Chairman.

We have got a little rocket-launching station in Alaska where we launch some small rockets. We have been trying to find a way to have joint commercial use of that. We are going to China tomorrow. Several of our rocket companies have gone to China to launch rockets because they do not have access to any of ours.

I got shot down the other day suggesting that maybe we ought to have a supercoordinating authority for all these launching facilities and see how much commercial use we could develop of those to offset some of the costs to the taxpayers of maintaining them as we are launching fewer and fewer of the satellites and other things for military purposes. But I do think this is part of it. You know, we can succeed if we share some of these facilities a lot more than if we just abandon them.

Mr. DEUTCH. Well, sir, I think that we are at the same place on this. There is a great deal of enthusiasm for allowing the Department of Defense facilities and installations and equipment to be made available to private-sector firms, provided it does not interfere with military functions. There is a lot that can be done there. I hope that the message is going out.

This is going to be done best when the people who run the laboratories or the installations in the field, whether in Oklahoma, Alaska, Hawaii, or wherever, see that that is an initiative that the Department favors, and there are not regulations that prevent it.

We are trying to get that message out, and I do believe that there are cases where particular laboratory directors or facilities commanders have taken initiatives, and that is what we want to see happen, sir, as long as it does not interfere with the military operation of the base.

Senator INOUYE. Senator Cochran.

Senator COCHRAN. Thank you, Mr. Chairman.

Mr. Deutch, welcome. We appreciate your being here.

TAX INCENTIVES

It occurs to me, as we are talking about how we can ease the transition from a big defense budget to a small defense budget that one of the things that could be done by the administration to really help would be to take a look at the Tax Code, in addition to some of these other changes that you are suggesting to improve the efficiency of the acquisition system. There are probably ways you can amend the Tax Code to make it a little bit easier for some of these firms to continue to stay in business.

I do not know all the answers to this, and I am not on the Finance Committee, but I can remember hearing and participating in some of the discussions about how, for tax purposes, payments to defense contractors are treated that are made over a period of time. And under one provision of the Tax Code, income is reportable and treated as income for tax purposes in one way if it is a certain kind of contract, and another way if it is different.

TAX INCENTIVES

I mean the whole thing struck me as one way that the defense industry is treated in a different way from private commercial enterprises when determining the tax consequences of income under Government contracts. Is this something you are aware of or know anything about?

Mr. DEUTCH. Senator Cochran, let me say, sir, that I have no knowledge of this whatsoever.

Senator COCHRAN. All right.

Mr. DEUTCH. I am tempted to add I am happy I do not, but I will not. You are right in pointing out that you can think of tax benefits or tax costs as being a way of providing incentives to firms as an alternative to direct Federal programs, and there are reasons to favor that—or a lot of reasons at least to examine it, and people have.

ACQUISITION REFORM

Senator COCHRAN. In connection with the acquisition rules and regulations, you point out, correctly I think, that because we do have a separate defense industry in many situations, that we have a very expensive acquisition system. Those are your words from your statement. And you say that you are going to submit proposals for legislative changes that will help make the system more efficient, and that there are administrative things that can be done as well.

What, for example, do you have in mind for administrative or legislative changes that will improve or make more efficient this acquisition system?

Mr. DEUTCH. We are very mindful of the section 800 report. I do not know whether you are familiar with it, Senator. But last year's Defense authorization bill, or the year before perhaps, authorized an outside group to come in and make a long series of proposals about changes to the acquisition system. That report is publicly available. They are extensive and there are hundreds and hundreds of recommendations.

We are, at the very moment, going through the report and determining which recommendations are especially important to start out with and bring those forward to Congress and ask for those changes in the rules, whether they are laws or regulations, which will enable us to operate the acquisition system more efficiently.

Senator COCHRAN. Well, I encourage you to work on that and with some dispatch, because we are running out of time here for some of these industries, where dual-use products are not available. You point out the fighter aircraft industry, the submarine industry, and the shipbuilding industry. Those are examples where there are no alternative dual-use products to manufacture or to deliver.

What about those industries? Do you have any ideas about what can be done to maintain a shipbuilding capability, for example, not just a nuclear submarine capability, but a combatant ship construction capability as well? We are seeing some of these numbers drop so low in the projections that we are getting from the administration that we are going to lose the capacity to build those ships in the future.

Mr. DEUTCH. I believe that the Department of Defense and the Nation have to look at this problem straight on and to say that we are at a stage where we are going to have to decide in some of these key areas how much defense-unique industrial base we want to preserve. Whether it is in shipbuilding, whether it is in fighter airplanes, whether it is in nuclear submarines, or in aircraft carriers, we have to face the issue squarely about how much of this industrial capacity we want to maintain in light of the highly uncertain future that is before this country.

DUAL-USE TECHNOLOGY

Senator COCHRAN. One example of a dual-use technology or product is the desktop computer that the Air Force wanted to buy. That has been held up and there are problems about getting that passed, and a lot of delays. What is the present status of that procurement, if you know?

Mr. DEUTCH. I do not know, sir. I would be happy to inquire and get back to you on it, sir.

[The information follows:]

DESKTOP COMPUTER

The contract in question is called Desktop IV (valued at over $700M) and is designed to provide personal computers and associated word processing, spreadsheet, graphics, and mail software. Designed as a pilot program for streamlining computer procurements (used a short functional specification, an electronic bulletin board for bidding, and no discussions with offerors), this contract was protested three times by industry to the General Services Administration Board of Contract Appeals. The first protest was sustained in January 1992. The second protest was sustained in December 1992. The third protest was finally resolved in favor of the government in May 1993 with the contract being awarded to Zenith Data Systems (ZDS) and Government Technology Services Inc. (GTSI). ZDS products have passed all acceptance testing and this part of the contract is now open for user orders effective June 16, 1993.

Although delayed two years by these protests, the end result has been worth the wait. Government users are receiving top-quality commercial systems (Intel 486 processors) with up to $1,500 worth of discounts compared to catalog prices. In addition, the system is backed by three years of free service, world-wide on-site service, 24 hour toll-free telephone technical support, and free software upgrades for the life of the contract.

The GTSI portion of the contract is still under review and should be available for orders in the near future.

Senator COCHRAN. Thank you, Mr. Chairman.

Senator INOUYE. Thank you, Senator Cochran.

Another area that many of my colleagues have brought to my attention is the fact that the pain is being disproportionately shared by the people of the United States. I think all of us will have to agree that the State of California, for example, is suffering more than most States, if not all other States.

That being the case, in proposing these programs, are you keeping these regions in mind, or are we going to play the political game of everyone gets a share?

COMMUNITY ASSISTANCE

Mr. DEUTCH. We are trying to focus on impacted areas the community assistance programs very definitely. In the personnel assistance programs, we are trying to focus them on impacted individuals and, therefore, that will eventually be in the impacted areas as well.

For the technology reinvestment aspects, the answer is we are not trying to focus those on different regions. We are trying to open them up to competition throughout the whole economy on the grounds that in the long run the best economic benefit and jobs creation benefit will be as a result of competition for the best ideas in the technology reinvestment. They are not targeted to particular regions.

Of course, many of the regions that are hardest hit by the defense cutbacks, as you have mentioned, California—southern California—also have an enormous amount of talent, and an incentive to participate in these programs. I am convinced that they are going to do very well in the competition, just on the basis of the high-quality people and technical backgrounds that they have in these areas.

We do not target the technology programs. We do not propose doing so to impacted regions, sir.

Senator INOUYE. We have heard from colleagues and also from community leaders that they believe we are placing too much emphasis on retraining and not enough on economic development. Is that complaint valid?

Mr. DEUTCH. With respect to the Department of Defense, sir.

Senator INOUYE. Yes.

PERSONNEL ASSISTANCE

Mr. DEUTCH. I would say that our principal responsibility is to help communities plan for transition. The personnel assistance should be focused on the military, civilian, and contractor personnel who have been separated as a result of the downturn.

So, economic development would not be a responsibility, if I understand your question, Mr. Chairman, except under unusual circumstances, a direct responsibility of the Department of Defense.

Senator INOUYE. Who will have that responsibility?

Mr. DEUTCH. I believe, sir, that the Economic Development Administration of the Department of Commerce is the correct place for that.

Senator INOUYE. Well, it would help, and this goes back to my first question, of who is in charge.

Mr. DEUTCH. Right.

Senator INOUYE. If you, Mr. Secretary, are not quite certain who does that, you can imagine the fellow on the street not knowing where it is.

Mr. DEUTCH. Correct. What I want to say, Mr. Chairman, firmly is that I think that we cannot look to the Department of Defense to do the economic development activity in these areas. That is where I could speak firmly, sir.

TIME REQUIRED FOR DEVELOPMENT OF DUAL-USE TECHNOLOGY

DUAL TECHNOLOGY

Senator INOUYE. We have said much about technology, dual technology, or development of technology. A question I have been asked by some of my colleagues is: Will that not take too long? It might take 5, 6, 7, 8, 10 years to develop technology. In the meantime, these people are waiting. Is that a valid observation?

Mr. DEUTCH. Yes, Mr. Chairman, I think it is. I do not believe that these technology programs are going to be panaceas for the very real economic hardship which is present in the country today. The important point is that we look toward, frankly, the future, and make sure that we put in place new programs. Having the opportunity to accumulate both the technical capacity and the capital required will lead to high-quality jobs in the future.

The answer to the question that it will not solve today's problems is not not to do the programs. Because if we do not do the programs like this, I do not think there will be many opportunities for high-quality jobs which are critical to the technology strength of the Nation, whether it is civilian or defense, to be in place 5 years from now.

Senator INOUYE. I think that point should be made very clear, because there are many, many Americans who feel that defense conversion programs, once they are implemented, would mean jobs available in 6 months or so.

Mr. DEUTCH. I am very concerned about having too great an expectation set for these efforts. And I agree with you, Mr. Chairman, that we cannot and we should not suggest that these programs will result in any near-term employment opportunities which will offset the very real hardships which are accompanying the downturn.

Senator INOUYE. Well, Mr. Secretary, as always, you have been—excuse me, I notice Senator Nickles is here.

Senator NICKLES. Mr. Chairman, I will pass, but I appreciate the comments that were made. I have some concerns, and I echo your comments about false expectations concerning the programs. A lot of people seem to think this is going to be a panacea, and I echo your statement—I am afraid that that is not the case. But I am here to listen and learn today.

Thank you.

Senator INOUYE. Mr. Secretary, I thank you for your candor, as always, and your forthright remarks. I am certain you realize that this debate will have to continue not for months, but for many years, I think. So we look forward to working with you.

In the meantime, Senator Stevens and I and others have questions we would like to submit to you for your consideration and response, sir.

Mr. DEUTCH. Certainly, sir. Thank you very much.

Senator INOUYE. Thank you.

Now we proceed to our second panel.

ADDITIONAL COMMITTEE QUESTIONS

[CLERK'S NOTE.—Additional questions submitted by subcommittee members, together with the Department's responses, will appear in the appendix portion of the hearings.]

NONDEPARTMENTAL WITNESSES

INTRODUCTORY REMARKS

Senator INOUYE. Appearing before the subcommittee are three corporate leaders of defense industries. They are Dr. Renso Caporali, the chief executive officer of the Grumman Corp.; Mr. James Turner, president of the Electric Boat Division of General Dynamics; and Mr. Bob Dankanyin, the president of the Hughes Industrial Electronics Co.

Gentlemen, we welcome you here today, and we thank you very much for your willingness to present your views before the subcommittee. As you know, diversification for any company is a major challenge. But for defense firms such as yours, I think that challenge is compounded by a variety of accounting, regulatory, and production practices that are unique in the defense market.

We are surely aware that not all defense business are sanguine about the prospects for Government-sponsored diversification. Yet, others are encouraged by the Government's emphasis to support diversification through technology development.

This panel of industry leaders assembled before us reflects a variety of views on the issue of defense conversion. I think we can anticipate very candid remarks from these panel members. All of you have submitted prepared statements. I can assure you they will be made part of the record, and so you may summarize or you may proceed in the fashion that you wish to. May we begin with Dr. Caporali?

STATEMENT OF DR. RENSO CAPORALI, CHIEF EXECUTIVE OFFICER, GRUMMAN CORP.

Dr. CAPORALI. Thank you very much, Mr. Chairman and members of the subcommittee. I appreciate the opportunity to talk to you today about conversion. As chairman of the Grumman Corp., I have obviously been concerned and very much involved with this particular subject. If you were to look at the financial results, it would appear that Grumman is adjusting well to the downturn in defense spending. Our stock price has increased, debt is down, earnings are going up, at least at the moment, but that obviously does not tell the whole story. Just 6 years ago, we employed nearly 34,000 people and today it is a shade over 20,000. Tremendously talented people that have lost their jobs, and we believe that the company and probably the country are poorer for that.

With more than 400,000 people in defense laid off since 1988 and another million predicted, it seems that much of the peace dividend will be spent on unemployment checks and possibly other, even less pleasant, social costs.

Grumman and every other contractor that I know of have changed a lot in the past few years. Industry is, in fact, changing much faster and more dramatically than the public sector is. It has to if financial ruin is to be avoided.

In addition to massive layoffs, we have cut costs, gotten rid of underutilized facilities, and become much more competitive. We have all instituted total quality programs, focusing on giving our customers the best possible value.

We have also been working quite hard to diversify, but it is a long, slow process, and it simply will not take up the slack. Grumman learned a lot about how to make sophisticated electronics and information systems work together through the experience of building military aircraft. Today, we are creating information systems for NASA, the Internal Revenue Service, and other Federal and State agencies. It has become an important and a growing part of our company, but we have been at it now for about 20 years, and it is still just a generous fraction of our business base.

The same holds true for our aluminum truck business—and that got started at the end of World War II to use up leftover aluminum and to keep people employed.

Building on what you already know is a sensible way to diversify. It is the way we intend to go, but we have to tell you that it takes a long time.

The diversification efforts of the 1970's, where defense companies tried to create overnight successes, were anything but successful. From watches and coffins to subway cars and solar panels, everybody got into something that they knew absolutely nothing about, and to the best of my knowledge, no one made a dime.

In most cases, companies were trying to break into market that already had plenty of very well-established suppliers. In others, they were offering very interesting technologies that absolutely no one wanted.

Grumman, for example, came up with something called a hypobaric container. It cost two-and-a-half times as much as a standard refrigerator container, but it could keep perishables fresh for three, four, and five times as long. The trouble was, nobody needed to keep a papaya for 21 days instead of 4. We understood the technology all right; we didn't have a clue about the market. Ultimately it was a total writeoff.

The industry learned many valuable lessons during this period. One is that breaking into an existing market—consumer electronics for instance—is extremely difficult. Having the necessary technology is the very least of the problems. Even if a company were to do so, it wouldn't necessarily create any new jobs: most likely you are swapping one American job for another. This is a zero sum game.

We as an industry have painfully learned that a market will not automatically develop around even an exceptional technology. Defense contractors cannot readily become consumer product companies. We lack the infrastructure, the consumer-oriented expertise, and the ads on MTV. There are too many companies out there ahead of us, and they have no desire to have us join the party.

More importantly, by trying to become something we will never be, we are wasting what we already are: an industry that knows how to work with the public sector to tackle complex problems and provide high-technology solutions. And this country has so many complicated problems begging for solutions that it cannot afford to waste such a well-educated and creative work force.

The list could possibly include such things as getting rid of nuclear waste, improving transportation systems, maybe finding alternate energy sources. The defense industry has people who have developed nuclear lasers for weaponry. These same people can solve the problems associated with the transmutation of nuclear waste and figure out what to do with the materials produced by the country's 110 nuclear powerplants.

People who have done specialized sensor work on satellites can build key components of intelligent highways. Experts in the field of superconductivity know how to manipulate the forces of magnets for high-speed, magnetically levitated trains. However, these are the kind of programs that almost certainly will not be solved or even addressed without a Government mandate because the risks involved are tremendous. Therefore, raising sufficient private investment capital is all but impossible. Industry simply cannot take on these kind of programs alone.

A Government mandate creates a market for the skills that the defense industry already has in place, and I believe that creating a market is the best way the Government can help effect defense conversion.

Industry would be willing to invest in programs like these. Grumman, for one, has already done so although on a very modest scale. To do more, there must be clearly defined goals set by the Government and a commitment to follow through.

The defense industry would like nothing more than the opportunity to compete for this type of work, to team, once again, with Government to achieve national objectives as it did through the cold war.

It would probably be argued that our country cannot afford such a mandate, that any broad-based technical initiatives would inevitably increase the already large deficit. I would argue, however, that stabilized employment and consequent economic growth could do much to offset this effect. I think it at least ought to be considered.

I think it is very interesting that the Federal deficit started growing at its fastest rate in the late eighties and early nineties as the defense budget was coming down rapidly. The cause-and-effect relationship certainly bears closer inspection.

It is possible that the $500 million in defense conversion seed money that ARPA proposes to distribute will be spread too thin to do anyone much good except possibly the agencies that undoubtedly will spring up to administer it.

If, theoretically, the money is distributed evenly around the country, we are talking about $10 million per State. Now, maybe for some small businesses, for second, third, and fourth tier manufacturers, a grant of $50,000 or $100,000 could stimulate some type of technology that would yield important benefits years from now, or possibly provide some retraining.

But these are not immediate solutions, and it would be even harder to find any real benefits to the prime defense contractors or the people affected by the defense downturn.

In summary, a number of things will help effect defense conversion. Breaking down the walls between commercial and military development and procurement; a more supportive export policy; better investment tax credits. But given the magnitude of the problem, all of these things are secondary to what I believe is the real answer: that government must create or help create a market.

If we as a nation are willing to determine initiatives,—complex problems that demand high-technology answers—industry will respond. The retraining and reapplication of resources will follow naturally. We will not have to be goaded into it.

There could be a real return on this investment, such as cleaner energy, better transportation, or faster information. It might well stimulate the economy. It might well, over time, pay for the cost of implementation. Further, it will do much to preserve a unique development and manufacturing base that I think you will all agree we might need again to gear up for a military emergency. It is obvious that the world is far too unstable for us to assume that military buildups are a thing of the past.

I thank you very much, gentlemen.

Senator INOUYE. Dr. Caporali, I thank you very much. Thank you for your provocative statement.

[The statement follows:]

STATEMENT OF RENSO CAPORALI

Good morning, Mr. Chairman and members of the subcommittee. I appreciate the opportunity to talk to you today about defense conversion. As chairman of the Grumman Corporation, I am deeply involved and concerned with this important issue.

If you look just at financial results, it would appear that Grumman is adjusting well to the downturn in defense spending. Our stock price has increased, debt is coming down, earnings are going up. But that doesn't tell the whole story. Just six years ago, we employed 33,700 people. Today, it's a shade over 20,000. Tremendously talented people have lost their jobs, and our company and the country are poorer for that.

Throughout the industry, more than 400,000 people have been laid off since 1988, and over a million more are expected.

Grumman and every other contractor that I know of have changed a lot in the past few years. Industry has, in fact, changed much faster and more dramatically than the public sector has. In addition to massive layoffs, we've cut costs, gotten rid of underutilized facilities, and become much more competitive. We've instituted quality programs, focusing on giving our customers the best possible value.

We've also been working hard to diversify -- but it's a long, slow process and it simply won't close the employment gap. Grumman learned a lot about how to make sophisticated electronics and information systems work together through the experience of building military aircraft. Today we're creating information systems for NASA, the IRS, and other federal and state agencies. It's an important and growing part of our company -- but we've been at it for more than 20 years and it's still just a generous fraction of our business base. The same holds true for our aluminum truck business -- and that got started at the end of World War II to use up leftover aluminum and to keep people employed. Building on what you already know is a sensible way to diversify -- but it takes a long time.

The defense industry's diversification efforts in the 1970s were notably unsuccessful. From watches and coffins, to subway cars and solar panels, companies got into businesses they knew nothing about -- with predictable results. In most cases, companies were trying to break into markets that already had a sufficient number of suppliers. In others, they were offering technologies that no one wanted.

The industry learned many valuable lessons during this period. One is that breaking into an existing market -- consumer electronics, for example -- is extremely difficult. Even if a company were able to do so, it wouldn't necessarily create any new jobs: it merely exchanges one American job for another. This is a zero-sum proposition.

Another lesson learned is that a market doesn't automatically develop around even an exceptional technology. Defense contractors can't readily become consumer product companies. We lack the infrastructure and the marketing expertise. It is unrealistic to think that we could become competitive in this arena.

More importantly, by trying to become something we'll never be, we're wasting what we already are: an industry that knows how to work with the public sector to tackle complex problems and provide high-tech solutions. And this country has so many complicated problems demanding solutions that it can't afford to waste its best-educated and most creative work force. The list would include getting rid of nuclear waste; improving transportation; finding an alternate energy source.

The defense industry has people who have developed nuclear lasers for weaponry. These same people can investigate the transmutation of nuclear waste and figure out what to do with the materials produced by this country's 110 nuclear plants.

People who have done specialized sensor work on satellites can build key components of intelligent highways. Experts in the field of superconductivity know how to manipulate the forces of magnets for high-speed, magnetically levitated commuter trains.

These are the kinds of problems that won't be solved without a government mandate: because of the risk involved, raising sufficient private investment capital is impossible. Industry cannot tackle these projects alone.

A government mandate creates a market for the skills the defense industry already has in place; and I believe that creating a market is the best way government can effect defense conversion. Industry would be willing to invest in programs like these -- Grumman, for one, has already done so -- but there must be clearly defined goals set by the government, and a commitment to follow through. The defense industry would like nothing more than the opportunity to compete for this work -- to team once again with government to achieve a national objective, as it did during the Cold War.

It would probably be argued that our country cannot afford such a mandate; that any broad-based technical initiatives would inevitably increase the deficit. I would argue, however, that stabilized employment and consequent economic growth could do much to offset this effect. I think it's interesting that the federal deficit started growing at its fastest rate in the late '80s and early '90s -- as the defense budget was coming down. The cause-and-effect relationship certainly bears closer inspection.

It's also possible that the $500 million in defense conversion seed money that ARPA proposes to distribute will be spread too thin to do anyone much good. If, theoretically, it's distributed evenly around the country, the amount is about $10 million per state. For second, third and fourth tier manufacturers, a grant of $50,000 or $100,000 could stimulate a technology that will yield important benefits years from now, or provide for some retraining. But these are not immediate solutions, and we would expect that any real benefits to the prime defense contractors would be even more elusive.

In summary, a number of things will help effect defense conversion. Breaking down the walls between commercial and military development and procurement; a more supportive export policy; better investment tax credits. But given the magnitude of the problem, all of these things are secondary to what I believe is the real answer: that government create a market.

If we as a nation can determine initiatives -- complex problems that demand high-tech answers -- industry will respond.

There could be a real return on this investment: such as cleaner energy, better transportation, or faster information. It could stimulate the economy. Over time, it might more than pay for the cost of implementation.

Further, it would do much to preserve a unique development and manufacturing base that we might need again to gear up for a military emergency.

It's obvious that the world is far too unstable for us to assume that military build-ups are a thing of the past.

Thank you.

STATEMENT OF JAMES F. TURNER, PRESIDENT, ELECTRIC BOAT DIVISION, GENERAL DYNAMICS CORP.

Senator INOUYE. Now may I call on Mr. Turner.

Mr. TURNER. Thank you, Mr. Chairman. As executive vice president of General Dynamics and president of its Electric Boat Division, I am pleased to be with you in the committee this morning.

As steward of one of the Nation's two remaining nuclear-capable shipbuilding yards, I am acutely aware of the need for a timely and effective response to the realities of reduced defense spending. I am, at the same time, convinced that we must ensure the preservation of the critical capabilities of our defense industrial base. In fact, I addressed this subject 2 years ago when I appeared before this subcommittee to describe the impact of reduced submarine procurement on the industrial base.

Less than a year later, the industry I represent received the dubious distinction as the first major defense segment to suffer the effects of drastic spending cuts when the Seawolf program was reduced from 29 ships to the present level of 2 submarines.

Since the end of the cold war there has been no shortage of suggestions intended to help businesses wean themselves from defense dependency. Diversification is one. Conversion to commercial production is another, and one that is now generating considerable attention.

I believe the Defense Conversion Commission described the current state of affairs well when it stated, and I quote, "The national challenge of conversion is to seize the opportunity and accomplish the reallocation in the most timely and efficient way possible while still preserving the appropriate defense industrial base."

In the abstract, conversion is certainly an attractive concept. The notion of beating swords into plowshares has widespread appeal, to be sure, but in this case the devil is in the details. What may well work in one segment of the defense industry will utterly fail in another.

Adding to the growing currency of conversion is a related concept that calls for production lines to be dual use. That is, capable of alternating between commercial and defense products. Again, this approach may work in some instances—aircraft engines, for example—but it is by no means a panacea for an industry in the midst of one of the most precipitous declines we have seen in recent years.

Bear in mind that the needs of most markets are already being met. Bringing additional capacity into these markets is not going to help anyone.

Before the defense industry pursues a particular approach such as conversion, we must get a sense of the bigger picture. As the Defense Conversion Commission stated in its report, and I quote again, "The long-term success of defense conversion is directly tied to the overall economic growth. Specific actions may need to be taken to facilitate the transition by companies and local economies to preserve the needed defense capability and to alleviate the effects of worker dislocation."

In short, a strong, expanding economy must be the basis for an effective conversion effort, providing employment for those workers no longer needed for defense production.

More immediately, one action that would aid us in the defense industry would be for the Government to project its basic defense requirements. This essential step must precede the development of plans to retain critical industrial base capabilities.

Analyses now underway should serve as a starting point for the pending decisions that will shape the Nation's future defense industrial base. We in industry need the Government to develop a cost-effective acquisition strategy that will satisfy reduced force level requirements while preserving skills, expertise, and facilities used in the design and manufacture of unique and specialized defense products.

For some companies, the conversion to dual-use production may well represent a viable strategy. However, the successful transition from Government contracting to the commercial marketplace is much trickier than simply applying existing capabilities to new products. Adjusting to a new business culture, understanding the dynamics of the commercial markets, and overcoming the advantages of entrenched competitors, represents significant hurdles to conversion.

Even with a transition plan that is carefully thought out and rigorously applied, many businesses attempting to convert to commercial production will trip over unforeseen obstacles and fall.

Regardless of what actions Government and industry take, sharply reduced defense spending is going to bring pain to the lives of thousands of workers. The consequences of these reductions will be that much more severe in areas that are especially defense dependent.

If Government-aided conversion does not always make sense, perhaps Federal assistance in areas hard hit by defense reductions does. This assistance could take the form of investments to stimulate particular regional economies and to offset, in part, military expenditure declines. This kind of approach could especially benefit small businesses and growing companies planning to build new facilities.

I have already asserted that conversion is not a silver bullet for the defense industry woes. What works for one defense contractor will not necessarily work for all. This is particularly true in the design, construction, and life-cycle support of nuclear submarines.

The design and engineering capabilities required for nuclear submarines are unique resources that combined are nothing short of a national asset. Each phase of design, from concept definition to final design, employs a tremendous range of engineering and other technical disciplines which are integrated to produce the final ship design.

These capabilities are further employed in the submarine life-cycle support. The entire design process spans a period of more than 10 years, with little opportunity over that time to gain experience from repetition. The employees involved in this process require 3 to 5 years of training to effectively and competently participate in the design of submarine systems.

Facilities and equipment obviously are elements integral to the submarine industrial base, but the real key to our national capability is a work force dedicated to the design and construction of these fine nuclear ships. This highly skilled work force is a product of years of extensive and specialized training and, most importantly, hands-on application.

Members of this work force consistently demonstrate extremely high levels of craftsmanship while adhering to stringent and unyielding military and nuclear quality requirements. Further defining these employees is their ability to perform to exacting standards in a frequently challenging shipyard environment.

Without a critical mass of experienced and motivated design, engineering, and production personnel, there is no possibility of sustaining the skill mix needed to build nuclear submarines. This work force must be maintained.

The Nation's submarine industrial base actually comprises three separate but interrelated elements—research and development, production, and life-cycle support. These elements are supported by a network of more than 5,000 suppliers who represent a range of skills and capabilities as unique as the submarines they help build.

Meeting relentless requirements for engineering, quality, and manufacturing processes, these suppliers provide specialized products and engineered components in low-volume lots. In many cases, these businesses are dedicated exclusively to the submarine industrial base.

I have tried this morning to explain just how tightly focused the efforts of the submarine industrial base really are. We do one thing, and we do it exceedingly well. Unlike some military products, however, submarines have no commercial application. The goal of dual-use production is industrial base preservation, but in the case of submarines, it simply will not work.

It may sound simplistic and it may sound self-serving, but the fact of the matter is, the only real way to sustain the industrial base is to design and build submarines at some level. In the meantime, we at Electric Boat are making efforts to supplement our core submarine design and construction business with the establishment of market extension business initiatives.

This initiative is focused on four broad areas: heavy industrial manufacturing, marine systems, manufacturing and technical services, and emerging programs. These business units were developed to capitalize on our existing skills and capabilities in an effort to land new customers in new markets.

Our objective in pursuing market extension work is very simple: to help maintain the work force we need to stay in the submarine business over the long term. Our commitment to this effort hinges on two factors: maintaining a strong business in submarine design and construction, and mitigating the financial risk associated with new market extension work.

Over the long term, what the overall submarine industrial base requires is a national investment strategy that focuses on the preservation of its unique and critically needed capabilities. A key element of this strategy should be a new acquisition approach.

This approach should maintain low-rate production with the design and construction of submarines that provide baseline capabilities as well as the potential for modular modifications and technology insertion as the need and missions change.

The effort to sustain submarine design and construction capabilities should be seen as an integral part of a larger effort to preserve the Nation's entire shipbuilding industrial base, which encompasses submarines, aircraft carriers, surface combatants, and auxiliaries.

Industry does not expect Government to pick the winners and the losers as we adjust to what promises to be permanent defense spending reductions. Rather, we need Government to describe to us what the future defense requirements will be.

If these requirements include the maintenance of the Nation's submarine design and construction capability, then we surely support the position of Deputy Defense Secretary Perry, who in testimony before this subcommittee last week advocated continued low-rate production at a single submarine shipyard. This, we are convinced, represents the most effective and affordable way to sustain the industrial base.

Thank you, Mr. Chairman.

Senator INOUYE. Thank you very much, Mr. Turner.

[The statement follows:]

STATEMENT OF JAMES E. TURNER, JR.

Good morning. I'm Jim Turner, executive vice president of General Dynamics Corporation and president of its Electric Boat Division.

As the steward of one of the nation's two remaining nuclear-capable shipyards, I am acutely aware of the need for a timely and effective response to the realities of reduced defense spending. I am, at the same time, convinced that we must ensure the preservation of the critical capabilities of our defense industrial base.

In fact, I addressed this subject two years ago when I appeared before this subcommittee to describe the impact of reduced submarine procurement on the industrial base. Less than a year later, the industry I represent received the dubious distinction as the first major defense segment to suffer the effects of drastic spending cuts when the Seawolf program was reduced from 29 ships to 2.

Since the end of the Cold War there has been no shortage of suggestions intended to help businesses wean themselves from defense dependency. Diversification is one. Conversion to commercial production is another—and one that is now generating considerable attention.

I believe the Defense Conversion Committee described the current state of affairs well when it stated: "The national challenge of conversion is to seize the opportunity and accomplish the reallocation in the most timely and efficient way possible while still preserving the appropriate defense industrial base."

In the abstract, conversion is certainly an attractive concept. The notion of beating swords into plowshares has widespread appeal, to be sure. But in this case, the devil is in the details. What may work very well in one segment of the defense industrial base may fail utterly in another.

Adding to the growing currency of conversion is a related concept that calls for production lines to be dual-use; that is, capable of alternating between commercial and defense products. Again, this approach may work in some instances—aircraft engines, for instance. But it is by no means a panacea for an industry in the midst of one of the most precipitous declines we've seen in years. Bear in mind that the needs of most markets are already being met. Bringing additional capacity to these markets isn't going to help anyone.

Before the defense industry pursues a particular approach such as conversion, we need to get a sense of the bigger picture. As the Defense Conversion Committee stated in its report: "The long term success of defense conversion is directly tied to overall economic growth . . . specific actions may need to be taken to facilitate the transition by companies and local economies, to preserve needed defense capability, and to alleviate the effects of worker dislocation. . . ." In short, a strong and expanding economy must be the basis for an effective conversion effort, providing employment for those workers no longer needed for defense production.

More immediately, one action that would aid us in the defense industry would be for the government to project its basic defense requirements. This essential step must precede the development of plans to retain critical industrial base capabilities. Analyses now under way should serve as the starting point for the pending decisions that will shape the nation's future defense industrial base. We in the industry need the government to develop a cost-effective acquisition strategy that will satisfy reduced force level requirements, while preserving the skills, expertise and facilities used in the design and manufacture of unique and specialized defense products.

For some companies, the conversion to dual-use production may represent a viable strategy. However, the successful transition from government contracting to the commercial marketplace is much trickier than simply applying existing capabilities to new products. Adjusting to a new business culture, understanding the dynamics of commercial markets and overcoming the advantages of entrenched competitors represent significant hurdles to conversion. Without a transition plan that's carefully thought out and rigorously applied, businesses attempting to convert to commercial production will trip over unforeseen obstacles and fall.

Regardless of what actions government and industry take, sharply reduced defense spending is going to bring pain to the lives of thousands of workers. The consequences of these reductions will be that much more severe in areas that are especially defense dependent. According to a just-released Connecticut Economic Development Commission study, cutbacks at Electric Boat and the New London Submarine Base could result in a regional unemployment rate of more than 25 percent and the loss of 37,500 jobs across the state. Moreover, this study assumes that Electric Boat will maintain a work force of 7,500 employees. Should Electric Boat be forced to close, the total number of Connecticut jobs lost would climb past 50,000.

If government-aided conversion doesn't always make sense, perhaps federal assistance for areas hard hit by defense reduction does. This assistance could take the form of investments to stimulate particular regional economies and offset in part military spending declines. This kind of approach could especially benefit small businesses and growing companies planning to build new facilities.

I've already asserted that conversion is not a silver bullet for the defense industry woes. What works for one defense contractor won't necessarily work for all defense contractors. This is particularly true in the design, construction and lifecycle support of nuclear submarines.

I can best support my contention by describing for you the skills, resources and facilities that make up what has evolved into a vital and virtually irreplaceable national defense capability.

The submarine industrial base is one sector of the overall national shipbuilding base, which itself represents high-technology heavy manufacturing in its most complex form. The capabilities used to produce surface ships and submarines are shared by the shipbuilding industry, but not found or used anywhere else in the design/manufacturing world. These capabilities represent an enormous investment in dollars, manpower, facilities and time.

The specific capabilities of the submarine industrial base have been a long time in the making. Electric Boat's own roots extend back to 1899, when the company was created to build the world's first operational submarine, the Holland. During World War I, we delivered 85 submarines to the Navy and overhauled another 30. At the height of production in World War II, Electric Boat was launching a new boat every two weeks. By war's end, we had delivered 74 submarines, more than any other public or private shipyard in the country.

Our standing as a shipbuilder with singular capabilities began emerging more than 40 years ago with the design and construction of the first nuclear-powered submarine, the U.S.S. *Nautilus*. Of the 18 subsequent classes of submarines, we designed 14. Over that same period, we also established a reputation as the industry leader in submarine nuclear propulsion.

Electric Boat has played a significant role in building this industrial base, which is defined by extraordinary complexity—both of its products and the processes needed to build them.

The ships themselves are astounding examples of applied and integrated technology. Over a six-year, 12-million-manhour period, we integrate into each submarine an array of weapons and life-support systems that span the technological spectrum. In the case of a Trident ballistic-missile submarine, for example, there are embodied some 265 subsystems, 25,000 components and 350,000 parts numbers. Propulsion is supplied by compact, reliable nuclear reactors so safe that crew members working only a few feet away for extended periods are exposed to no more radiation than they would be while strolling down a city street.

The design and engineering capabilities required for nuclear submarines are unique resources that, combined, are nothing short of a national asset. Each phase of design, from concept definition to final detail design, employs a tremendous range of engineering and other technical disciplines, which are integrated to produce the final ship design. These capabilities are further employed in submarine lifecycle support.

This entire design process spans a period of more than 10 years, with little opportunity over that time to gain experience through repetition. The employees involved in this process require three to five years of training to effectively and competently participate in the design of submarine systems.

The production capabilities of the submarine industrial base derive from a range of unique and specialized facilities that must be maintained and kept up to date. At Electric Boat, these facilities include an automated plate-handling facility, a land-level construction facility, a special hull-treatment facility, an automated frame and cylinder manufacturing facility, a Navy nuclear facility, a heavy-component lift system, and production tools, jigs and fixtures. These largely one-of-a-kind facilities represent an immense investment and have a replacement value well in excess of $1 billion.

Facilities and equipment obviously are elements integral to the submarine industrial base. But the real key to our national capability is a work force dedicated to the design and construction of nuclear submarines.

This highly skilled work force is the product of years of extensive and specialized training—and most importantly, hands-on application. Members of this work force consistently demonstrate extremely high levels of craftsmanship, while adhering to stringent and unyielding military and nuclear quality requirements. Further defining these employees is their ability to perform to exacting standards in the frequently challenging shipyard environment.

Without a critical mass of experienced and motivated design, engineering and production personnel, there is no possibility of sustaining the skill mix—needed to build nuclear submarines. This work force must be maintained.

The nation's submarine industrial base actually comprises three separate, but interrelated elements—research and development; production; and life-cycle support. These elements are supported by a network of some 5,000 suppliers who represent a range of skills and capabilities as unique as the submarines they help build. Meeting relentless requirements for engineering, quality and manufacturing processes, these suppliers provide specialized products and engineered components in low-volume lots. In many cases, these businesses are dedicated exclusively to the submarine industrial base.

I've tried this morning to explain to you just how tightly focused the efforts of submarine industrial base really are. We do one thing and we do it exceedingly well. Unlike some military products, however, submarines have no commercial application. The goal of dual-use production is industrial-base preservation. But in the case of submarines, it simply won't work. It may sound simplistic, and it may sound self-serving, but the fact of the matter is this—the only real way to sustain the industrial base is to design and build submarines.

In the current environment, that translates into low-rate production. We need to keep the industrial base "warm" over the near term. This, in turn, can best be accomplished by committing the $540 million allocated in fiscal year 1992 to construction of the third Seawolf.

In the meantime, we at Electric Boat are making efforts to supplement our core submarine design and construction business with the establishment of a market-extension business initiative. This initiative is focused on four broad areas: Heavy Industrial Manufacturing; Marine Systems; Management and Technical Services; and Emerging Programs. These business units were developed to capitalize on our existing skills and capabilities in an effort to land new customers in new markets.

I have to emphasize, however, that this work will not come close to offsetting the decline in our submarine business, nor will it preserve our key design and construction capabilities. With a major diversification project worth about $20 million and employing only several hundred people, we would need to land 50 such jobs to replace one submarine contract. This would involve managing some 200 development projects since, typically, only one in four results in new business. Realistically, I don't believe that volume of outside work is available. Furthermore, instead of diffusing our attention, we should retain our concentration on the very demanding business of nuclear submarine construction.

Our objective in pursuing market-extension work is very simple—to help maintain the work force we need to stay in business over the long term as a full-service submarine builder. Our commitment to this effort hinges on two factors—maintaining a strong business in submarine design and construction, and mitigating the financial risks associated with new market-extension work.

Over the long term, what the overall submarine industrial base requires is a national investment strategy that focuses on the preservation of its unique and critically needed capabilities. A key element of this strategy should be a new acquisition approach. This approach should maintain low-rate production with the design and construction of submarines that provide baseline capabilities, as well as the potential for modular modifications for specific Navy missions.

The effort to sustain submarine design and construction capabilities should be seen as an integral part of a larger effort to preserve the nation's entire shipbuilding industrial base, which encompasses submarines, aircraft carriers, surface combatants and auxiliaries.

Industry doesn't expect government to pick the winners and the losers as we adjust to what promises to be permanent defense spending reductions. Rather, we need government to describe for us what its future defense requirements will be.

If these requirements include the maintenance of the nation's submarine design and construction capability, then we would support the position of Deputy Defense Secretary Perry, who in testimony before this subcommittee last week advocated continued low-rate production at a single submarine shipyard. This, we are convinced, represents the most effective and affordable way to sustain the submarine industrial base.

STATEMENT OF ROBERT J. DANKANYIN, PRESIDENT, HUGHES INDUSTRIAL ELECTRONICS CO.

Senator INOUYE. Now I will call on Mr. Dankanyin.

Mr. DANKANYIN. Good morning, Mr. Chairman and members of the subcommittee. My name is Bob Dankanyin, I am a senior vice president of Hughes Aircraft Co. and president of Hughes Industrial Electronics.

From January 1989 until just a week or so ago, I was directing the company's diversification efforts from the corporate level. I appreciate the opportunity to share with you today some of the things we have done and are doing, and some of the lessons we have learned.

Historically, Hughes has been a high-technology defense electronics company. In 1985, our sales were approximately $6 billion per year. Roughly 84 percent of those sales were in the defense and Government customer area, and at that time we employed 85,000 people.

Today, our sales are up to $8 billion per year, and only 72 percent of those sales are to Government and defense customers. Our employment is down to 62,000, and we have done this while absorbing a $450 million acquisition of General Dynamics missile business.

These figures illustrate the fact that we have been maintaining our core military business. In fact, we are gaining in market share while simultaneously diversifying into new business areas in order to increase our rate of growth in both revenues and earnings, and we believe we have been doing it successfully.

In my written testimony, I have provided several typical examples of what we are doing in this regard, and I will not elaborate on them now. I would like instead to use these next few minutes to put the current defense conversion efforts into a broader perspective.

Let me begin by saying that there are no universal answers. Each company has unique strengths and weaknesses. Therefore, what may be appropriate for one company may not be appropriate to another. I believe that Hughes has unique characteristics that have assisted our diversification efforts.

We have a very broad range of technologies. We have always fostered an entrepreneurial spirit. We started with a very good balance sheet and a solid backlog of programs that were generating the earnings we needed to fuel our diversification, and we have a very helpful parent in General Motors.

What we learned very early on, however, is that technology alone has very little value. It only has a value when it can be converted into products and services that fill a market need and then taken successfully to that market in a most cost-effective way. And so we have spent the last several years in assessing our core competencies, becoming market driven, forming multidisciplined teams, reducing our costs and response times, and really changing our corporate culture to let us compete in today's commercial markets. In other words we have developed a multipronged strategy and a process upon which our diversification efforts are based.

Our chairman, Mike Armstrong, has elaborated our strategies in several recent talks and I will just try to summarize them now. They are based on five key activities.

The first is making the customer king, really becoming market driven, trying to define in detail how our technologies fit into the marketplace.

Second is investing for leadership, investing in people, in technology, in capital equipment, in processes, but always in a market-driven way. And, in fact, we have invested roughly $3 billion in our diversification effort over the last 5 years.

The third is leveraging our strengths, extending our vast competencies and technologies to serve other customers and markets.

The fourth is pursuing alliances. As my colleagues said, having a product is not sufficient. You must have a way to get it to the marketplace. We have been using alliances as necessary to fill in our deficiencies and to build market competitiveness.

Finally, fifth is becoming the highest quality, lowest cost producer in the markets that we intend to serve.

These are actions that we are taking to improve. What can the Government do to help?

First, let us recognize that the current reduction in defense spending has been going on for 6 years or so, so in spite of the recent flurry of defense conversion activity, we are not dealing with a new phenomenon. It has been going on for some time and, in fact, similar if not greater defense downsizing has occurred at the end of every major war in which the United States has been involved.

Both history and common sense tell us the short- and long-term success of defense conversion in times of rapidly decreasing defense budgets is directly related to the general health and growth of the economy. When the general economy is healthy and growing, the transition will be easier. Without growth, the transition will be much more severe. In short, it is the overall economic growth that will create the jobs that we need as a country to replace the lost jobs in defense, scaling down of military work and scaling down of our forces.

The key to economic growth in this country is business development under the free enterprise system and I believe the proper role of Government is to create a business environment which fosters long-term economic growth.

Further, I believe the objective of achieving long-term economic growth is better served by redirecting defense savings into business investment rather than into immediate consumption.

In summary, the key to defense conversion is a healthy, growing economy, and I perceive the Government's role as one of defining a rational, integrated industrial policy and implementing that policy through legislation, which includes the following:

One. Decreasing taxes, thereby making money available for investment in capital assets and research and development.

Two. Reducing trade barriers to create a level playing field for U.S. businesses.

Three. Structuring our foreign aid to help the giver, not just the receiver, and I cover this in my written testimony.

Four. Creating tax credits for industry to retrain our work force for real jobs, and finally, encouraging dual-use development and production, and I mean this in the broadest sense—dual use production lines, reduction of military specs, more use of common equipment.

On this point, I would like to take the opportunity to commend this committee and particularly you, Mr. Chairman, on your support of the electric vehicle demonstrations projects. In Hawaii, Hughes is working very closely with a number of public and private groups as well as with the military to develop a truly dual-use demonstration project funded by your committee.

We see excellent job potential and a ready market in Hawaii, where the emphasis on environmental benefits makes the zero-emission vehicle a real natural.

In short, combining all of these efforts on the part of the Government to create a more healthy economic climate and given the right economic climate and incentives, industry can, and I believe will, do the rest.

Senator INOUYE. I thank you very much, Mr. Dankanyin.

[The statement follows:]

STATEMENT OF ROBERT J. DANKANYIN

INTRODUCTION

Chairman Inouye and members of the committee, my name is Robert Dankanyin. I'm a Hughes Senior Vice President who has been directing many of the company's diversification programs.

Thank you for the opportunity to discuss with you some of the efforts GM Hughes Electronics is undertaking to apply our defense technologies to new business activities in the commercial world.

Historically, Hughes has been an innovative high-technology company sharply focused on complex military requirements—we've provided some of the world's most advanced electronics: weaponry, satellite systems, command and control systems, and sensor systems.

Today we retain our core military businesses, but we're also diversifying into new business areas both to expand our capabilities and to increase our sales.

To illustrate this—in 1985, 84% of our sales were to defense and other government customers, while 16% were to commercial customers. Today these percentages have shifted to 72% government and 28% commercial.

This change has occurred simultaneously with a downsizing of our population from 85 thousand people to 62 thousand, as the DOD budget is being reduced. With this reduction in workforce, however, our sales have increased from $6 billion in 1985 to $8 billion in 1992; and our backlog has increased from $11 billion to $14 billion.

HUGHES DIVERSIFICATION: AN OVERVIEW

We've adapted our defense technologies into a number of commercial areas. For instance, we're diversifying from building air defense systems to developing and installing civilian air traffic control systems. And we're diversifying from simulators for military training into simulators for industrial training and even amusement parks.

Our single biggest diversification success is in satellite communications, a $4.5 billion market growing 15% annually. In the late 1960's we began manufacturing satellites for both DOD and NASA. During that period we also moved into the production of commercial satellites.

Since 1987, when we vertically integrated our satellite businesses, we have been a leader in all three segments of this market. We are the world's No. 1 producer—having built 40 percent of all the commercial satellites now in orbit. We're the largest private satellite fleet owner and operator, selling or renting transponder time to a wide range of users. We distribute more than 80 percent of today's cable signals. We've also branched out into manufacturing the equipment that links satellites to ground systems. Today we're the foremost producer of digital communications equipment used in private business networks for companies like GM and Wal-Mart.

HUGHES DIVERSIFICATION: FIVE CASE STUDIES

Out of this experience we've recently evolved some exciting new businesses with considerable near-term potential—for example, satellite direct-to-home TV broadcasting, and cellular telephony both for mobile and stationary users.

Today I'd like to focus on these businesses—as well as on three Hughes defense diversification efforts outside the telecommunications area. They are liquid crystal video projection, electric vehicle systems, and multi-chip radar modules used in both military and commercial applications. I believe these five examples tell us a great deal about opportunities available for defense diversification. They also highlight challenges encountered and lessons learned in pursuing these opportunities.

DIREC TV

Let me begin with DirecTV, America's first direct-to-home broadcast satellite, which Hughes will launch in December of this year. DirecTV will provide specialized programming nationally, starting with rural areas that ordinary cable television does not now reach. Subscribers will be able to tune in 150 channels, using 18-inch antennas mounted on their window sills.

As I just suggested, the direct broadcast technology evolved out of our more than 30 year history of building and operating satellites for government and commercial customers.

While we first received our DBS license from the FCC in 1985, the market demand prior to 1990 did not justify developing this business. Today, however, several factors have given us confidence to proceed. First, digital compression has been proven as a way to transmit multiple channels of high quality video programming through a single satellite transponder. That means we can distribute more channels at a lower cost. Second, enough programming now exists to fill a DBS system offering 150 channels. Third, our market research indicates that sufficient market demand now exists to warrant a large capital investment.

We've faced a number of challenges in this diversification effort: providing enough start-up capital; developing a digital compression algorithm that would produce a very high quality video signal to a small 18 inch satellite dish; building new very high power satellites with better reliability; and securing programming distribution agreements from cable operators whose programming is vital to this business.

The biggest challenge, however, has been to do all this before our window of opportunity has passed. We believe we need to make this business successful within the next four to six years, before the cable and phone companies implement their costly fiber optic networks. In the meanwhile, we offer an immediate and low-cost digital distribution system for the entire nation.

Hughes has committed more than $600 million to create the DBS business. We will open the "digital information skyway" in the spring of 1994, providing information, entertainment and educational services to any home equipped with our low cost antenna. We expect to reach a break-even point by 1996 or 1997, and have a highly successful business by the end of the decade, when we're projecting that 10 million households in the United States and Canada will be subscribers. The potential gross revenue from that many subscribers is several billion dollars per year.

CELLULAR TELEPHONY

Now I'll turn to our cellular telephony business—which partly derives from our military expertise in digital signal processing.

We've developed a new digital communications technology we think will give us a competitive edge in two areas: We're targeting mobile cellular markets—for example, urban areas where the capacity limitations of existing analogue systems have become a real problem. We're also targeting fixed wireless markets—for example, developing nations where we can economically upgrade inadequate existing telephone systems with microwave links rather than laying new wire. In both these markets our new ETDMA technology, which advances the cellular industry standard, will offer greater capacity, better signal quality and greater security than conventional analog switching technology.

What challenges have we faced in moving our technology into these markets? Let me start with the mobile cellular market here in the U.S. This is a very difficult market to penetrate because cellular operators tend to stick with existing system equipment and vendors. We've found ourselves viewed as a newcomer—because, while we were known for our excellent V-Sat and digital radio equipment, we did not have a telephone switch to offer. We solved this problem by teaming up with the world's largest telecommunications equipment supplier, Alcatel SEL from Germany. Alcatel was looking for a way to enter the U.S. market with its state of the art System 12 switching platform. So we've worked together, making a significant investment in R&D, to develop the world's most advanced wireless telecommunications system.

The next challenge was educating the customer. Although our system is technologically far superior to any other available, cellular operators hesitate to risk their revenues and customer bases on a system unproven in the field. So we had to locate a forward thinking customer willing to give our system a try. We're now in the last phases of testing with Bell South Cellular and will be deemed "commercially viable" by the fourth quarter of this year.

In the international fixed wireless market, the challenge is quite different: It's the availability of financing for the customer. Emerging countries all over the globe have asked us for proposals to supplement their phone systems with our wireless technology. They all clearly need the system, but most of them simply can't find a way to pay for it. Where there been access to hard currency, we've succeeded in selling our system—for example, in Tartarstan, a former Soviet state; in Chengdu, China; and in Central America. We're convinced many more such contracts will be negotiated as more flexible, more creative financing approaches are developed.

We've invested more than $50 million to develop this cellular telephony capability for mobile and stationary users. We see this as a very high potential business—the worldwide market is in the multi-billions of dollars.

JVC JOINT VENTURE

Another of our diversification efforts is a partnership between Hughes and the Japanese consumer electronics giant, JVC. This joint venture is producing and marketing a professional high-brightness, high-resolution image projector based on liquid crystal light valve technology developed for the military by Hughes. The projectors will be used in corporate videoconferencing, education, medicine, entertainment, simulation and other settings where people need to project high resolution graphics or video on very large screens. Consumer versions of this product will also be produced and distributed by JVC under license to the joint venture.

Let me discuss some of the technical, manufacturing and marketing challenges we've encountered in this undertaking.

The liquid crystal light valve was invented at our Malibu research labs in 1971. The extremely high resolution and high optical efficiency of the LCLV made it perfect for military large screen displays of status and situation reports. Hughes has sold many hundreds of these displays integrated into both shipboard and ground-based command and control systems.

A breakthrough in the late 1980's, using amorphous silicon as the photo sensor for these displays, enabled them to operate fast enough to be suitable for video applications. This meant the LCLV could be incorporated in commercial and even consumer products provided the cost of manufacturing the product could be lowered from $20,000 apiece to a few hundreds or tens of dollars apiece. That meant finding a partner with expertise in high-volume low-cost electronics manufacturing. This partner would also have to have marketing and distribution capabilities, so the technology could reach worldwide commercial and consumer markets.

Over a three year period, we discussed partnering possibilities with 18 to 20 major electronics companies in America, Europe and Asia before finally hooking up with JVC and discovering that they had a similar vision for this LCLV technology. From the time of our first meeting, it took ten months of plan refinement, due diligence and survey of Hughes' intellectual property to reach a definitive joint venture agreement. We established the venture with JVC in September, 1992.

Within the next two years, we expect the total required investment for this business by Hughes and JVC, to approach $200 million. As for return—we anticipate that by 1996, our new business will capture approximately 25 percent of the worldwide professional market for large display projectors, a market that now exceeds $1 billion in annual sales.

HE MICROWAVE

Another of our diversification efforts, HE Microwave, is focused on dual-use technology. HE Microwave was formed in July 1990, as a joint venture between Hughes Aircraft and Delco Electronics, to design and build radar modules for military commercial applications. Affordable radar modules produced in high-volume are required for next-generation military radar systems (active phased array radar), and also for automotive collision avoidance systems. As a joint venture, HE Microwave can draw on both the high-tech radar expertise of Hughes and Delco's high-volume commercial manufacturing methodology.

HE Microwave has "spun off" military radar technology into a variety of commercial applications. The first such product was announced in March and is called "Forewarn." It uses radar sensors on school buses to help the driver detect children in danger zones. If you visited the "Drive American Quality" exhibit on the mall yesterday, you probably saw the Forewarn display. Additional products are in development to help automobile drivers avoid collisions while backing up, changing lanes or going forward. These products have huge potential to make our highways safer.

Let's turn from spin offs to spin ons—applying commercial methodology to military radar modules. Using commercial concepts such as "design for volume manufacturing," we've been able to lower the cost of our radar modules, and can now manufacture them in high volume. This will mean big benefits for DOD.

As a dual-use facility, HE Microwave, of course, faces the classic challenge of trying to blend military and commercial operations. In the military world you may build 10 of something that costs $100,000; in the commercial world, you build 100,000 of something that costs $10. Each world has a very different culture, reward system, manufacturing strategy, etc. In addition, military programs have special accounting systems and documentation requirements, and unique specs for products and processes.

Still, HE Microwave has made great progress with diversifying: It is the leading dual-use facility for this technology. We run military and commercial products on the same line with the same equipment, the same people, the same accounting system and the same quality management system. And we've accomplished all our key objectives, both in product development and manufacturing strategy.

ELECTRIC VEHICLE SYSTEMS

Finally, let me turn to one of Hughes' largest efforts in diversification, our work in developing the electronic systems necessary for electric vehicles. Working with General Motors, numerous teammates and about 300 suppliers, Hughes has more than 100 engineers developing chargers, inverters, and electric power drives for automobiles, trucks and buses. Like our other diversification efforts, this one involves a lot of money, effort and time to get off the ground.

I'd like to take this opportunity to commend this committee, and particularly you, Mr. Chairman, on your support of electric vehicle demonstration projects. In Hawaii, Hughes is working very closely with the University of Hawaii, the High Tech Development Corporation, the Department of Business, Economic Development and Tourism and the military to develop a militarily useful demonstration project funded by your committee. We see excellent job potential and a ready market in Hawaii, where the emphasis on environmental benefits makes the zero emission vehicle a natural.

As is the case in our other diversification efforts, technology we developed for defense is proving useful in electric vehicles. It includes high electrical power switching, shaping and control technology from airborne radar transmitters; high-power density packaging from guided missile power applications; and high-reliability power electronic design from space satellite power applications.

Hughes' work in electric vehicles began in early 1990, when a core of about five people began participating in GM's Impact Electric Vehicle program. By the next fall, Hughes had re-engineered a power electronics unit for that vehicle and delivered prototype units to GM for evaluation and testing. We had also formed the Hughes Power Control Systems organization (HPCS), which developed electronics propulsion and charging systems for the vehicle.

Since that time, we have expanded the product line to include other applications, such as electronic propulsion systems for buses, light duty trucks, smaller electric passenger vehicles; plus an extensive line of vehicle chargers. Currently we are demonstrating and offering for sale propulsion and charging systems for electrically driven buses, pickup trucks, and passenger vehicles. Delivery of propulsion systems for a small fleet of GM Impact cars is immanent, and HPCS is continuing to evolve its engineering designs to lower costs and increase performance and reliability.

No market demonstrates better than this one the difference between military and commercial customers. Unlike the military marketplace, the commercial marketplace is a constantly moving target, where production plans must be constantly shifting as well; where product development must be self-funded; where customer interest must be earned; and where quality and workmanship standards are developed by producers, not mandated by the customer.

Clearly, this is a learning experience for us, and a fascinating one. So far our investment exceeds $50 million, including the product development dollars we have received from GM. But we believe that ultimately, the payoff for this investment will be enormous. One has only to breathe the air in any large metropolitan area to believe in the future of electric vehicles.

LESSONS LEARNED

All five of these examples of diversification illustrate that, for a company like GM Hughes, having leading-edge defense technologies is never enough. What finally matters is the ability to make our technology productive in the marketplace—to make it the basis of a unique, sustainable competitive advantage.

Hughes is following several fundamental business strategies: First, in deciding which opportunities to pursue, we're assessing our strengths and making sure we're always building off of our core competencies; Second, we're ensuring that we thoroughly understand customer needs in our new markets—and how to make the customer king; Third, we're supporting our new undertakings with substantial, continuing investment; Fourth, we're pursuing alliances that will supplement our technology and manufacturing strengths and help us market the new products we develop; and Fifth, we're doing whatever it takes to become the highest-quality, low-cost producer in the markets we select to serve.

In addition to these strategies, our diversification program draws on other strengths more particular to Hughes:

We've retained an entrepreneurial streak ever since Hughes was founded;

We have at our disposal a diverse array of advanced engineering and scientific resources that fit both existing and emerging markets;

And our parent company, General Motors, represents a special unique asset, both as a business and marketing partner with worldwide clout and as a very large potential customer.

ARPA PROJECTS

Our determination to focus only on market-driven technologies also guides our company's involvement in ARPA's defense conversion program—the so-called Technology Reinvestment Project, or TRP. Our approach to the TRP is to consider making proposals only for those technologies we are already pursuing for sound business reasons.

We're now putting together teams from business, government and academia and preparing to jointly propose projects in a number of areas, from image processing, software, and transportation command and control to microelectronics packaging, improved manufacturing processes, and simulation and training.

Because of the importance we place on maintaining our competitive advantage, we applaud the decision of the TRP to use special funding instruments that can provide favorable intellectual property treatment to the private sector. However, we are still uncertain how the government defines its right to retain the use of a TRP participant's proprietary technology. We want to be sure this right does not permit a company's technology to be given away to a competitor.

DIVERSIFICATION AND PEOPLE

In discussing diversification today, I've been stressing the redeployment of defense industry technologies and other physical assets. But, of course, another critical aspect of the diversification effort is the redeployment of people—and the retraining process this entails.

At GM Hughes, one important component of our retraining program is a special management course we developed for members of business units involved in commercial diversification. This intensive course focuses a lot of attention on how doing business in commercial markets differs from our traditional experience with the DOD customer. It emphasizes such skills and functions as business definition and customer analysis; segmentation of consumer markets; revenues, costs and profit impact; advertising, selling and promoting; and methods of assessing market attractiveness and portfolio opportunities. Each class consists of a management team from one of our businesses engaged in diversification, and course material deals directly with challenges they're actually encountering. This approach to retraining is making a big contribution to our defense diversification effort at Hughes.

GOVERNMENT'S PROPER ROLE

Whatever approaches Hughes and other companies devise, however, we'll still need support from government if we are to succeed. If we want to reallocate the money no longer needed for defense to production of goods that will make our nation stronger and more competitive in the global marketplace, it is clear the federal government must formulate an economic policy that fosters the private development of the nation's critical advanced technologies as well as the successful commercialization of appropriate military technologies.

In our view, the primary role of government in this effort should be to create the climate in which market forces can do their work, and then get out of the way.

More specifically, we propose a five-part "defense diversification" policy—one that would not only begin to achieve results immediately, but set us on the road to achieving our long-term goals.

TAX CREDITS FOR INVESTMENT

First, government should decrease taxes, so more money is available for businesses to invest, and should also allow tax credits for investment in capital assets and research and development. Further, these credits should not be limited to annual increases in investment, as some have proposed. Incremental credits do nothing for defense companies, whose investments will inevitably shrink simply because the industry is downsizing. Instead, allow defense companies credits based on our investment, and we will respond by spending for capital equipment and stepping up work on product development, making U.S. industry more competitive.

MAINTAINING A LEVEL PLAYING FIELD

Second, the new administration should help to create a level playing field for U.S. exports, both commercial and defense. The Office of the U.S. Trade Representative should continue negotiations aimed at ensuring that our commercial operations have the same degree of market access internationally as our competitors enjoy in America. As for foreign military sales, I believe our Government should support them, partly because they're becoming an ever more vital source of funding for U.S. companies' diversification programs. Granted, there are important non-commercial considerations here—any decision about defense exports obviously should be based on foreign policy and national security analyses. However, consistent with such policy determinations, government should rationalize export controls and restrictions on technology transfer. Further, government should provide credit guarantees to finance appropriate U.S. exports of defense products, similar to the guarantees provided by Eximbank to finance exports of commercial products.

FOREIGN AID THAT HELPS THE GIVER

Third, since we are committed to helping the countries of the former Soviet Union in their challenging effort to build capitalist economies, why not structure our aid to them in ways that would be directly help the giver as well as the receiver? For example, why not stipulate that some portion of our aid to the new CIS nations be spent for U.S. farm products; some be used to purchase telephone and other communications systems made by U.S. manufacturers; and some be used to help set up joint ventures with U.S. auto makers?

Not only would such aid help these former Soviet republics industrialize, it would help compensate U.S. companies for decreased defense spending. In effect, it would be a new way to turn swords into plowshares.

ENCOURAGE DUAL-USE DEVELOPMENT AND PRODUCTION

Fourth, the federal government should facilitate commercialization of defense technologies by lowering regulatory barriers to "dual-use" technologies, products and processes.

The Department of Defense has traditionally pursued a strategy of isolation in technological development, instituting complex bookkeeping requirements, milspecs and myriad other controls. As a result, defense companies dealing both with this inefficient bureaucracy and with the cost sensitivity of commercial markets have had to set up separate infrastructures or even separate factories.

Today such a separation of operations is often not justified. And of course, it frustrates technology transfer from defense to commercial activities and vice versa. Further, DOD is unable to benefit from the economies of scale that would be gained by combining commercial and defense production. Regulatory reform in this area is long overdue.

CREDITS FOR RETRAINING

The final element in our proposed defense diversification policy is retraining. We cannot afford to lose U.S. manufacturing jobs. We are still a nation with a high level of immigration, and it is manufacturing jobs that provide our work force with vertical economic mobility. When we eliminate manufacturing jobs in defense, I believe it is imperative we replace them not with low-paying service jobs but with manufacturing jobs in other industries.

We believe retraining ought to be done not by government, at taxpayers' expense, but by companies, for specific job—using tax credits. Not only has industry retraining proven much more efficient than training at the taxpayers' expense, it is more effective, and it produces people ready to perform real, available jobs. If we accomplish this part of defense diversification properly, our society will gain in every way.

SUMMARY

Today I have described several of the efforts Hughes has undertaken to expand technologies originally developed for defense applications into the commercial marketplace. In doing so, I have tried to demonstrate, using specific examples from our company's experience, the factors at work throughout the defense industry as the United States economy undergoes the transition resulting from the end of the Cold War.

I have also given you my company's views about what policies the federal government ought to adopt to help that transition occur least painfully—and also to result in the strongest, most competitive manufacturing base once it has been achieved.

For Hughes, meeting complex technological challenges is our daily work, and has been since the company was founded. The shift to a new kind of marketplace is no less a challenge, but it is one to which we are devoting hard work, creativity, and considerable resources. We look forward to working with government wherever appropriate to help sharpen America's competitive edge.

Thank you.

ADMINISTRATION SOLICITING INPUT FROM INDUSTRY

Senator INOUYE. Listening to all of you, and having listened to the Secretary, my first question is, Has the administration gone out to industry to actively seek input into the program that we are now hoping to present to the people of the United States? Have they come to see you?

Dr. CAPORALI. I cannot think of anything specific, sir. Obviously we are aware of what is being discussed and talked about, but I cannot at this point in time really think of any circumstance under which somebody actually came in and solicited our input.

Senator INOUYE. Mr. Turner.

Mr. TURNER. We would have the same answer, Mr. Chairman. We are aware of the programs and the things that are going on. We have commented at some working levels, but not any formal solicitation or formal interaction as to how they might be implemented.

Senator INOUYE. And you, sir.

Mr. DANKANYIN. We are the same as the rest of my colleagues. We have had no contact.

I would like to say, though, one of my colleagues referenced the Defense Conversion Commission report. We did spend about a day with that Commission some time ago last fall. I think the report is a very good piece of work. But no, we have not been contacted by the present administration.

Senator INOUYE. Are you aware of the administration going out into industry to seek advice and counsel, not necessarily from you, but from your colleagues in the business world?

Mr. TURNER. Mr. Chairman, I am not aware of it. I would make a comment that the reason for part of my comments in my testimony this morning is there seems to be much, much more energy addressing—much more rhetoric, if you will, vis-a-vis the dual use and conversion.

I certainly am not opposed to that—I hope that did not come across—but there is a lot more energy going into that direction than there is in facing the reality of some of the very difficult situations that we face.

I think some recent statements by Secretary Perry and others are the first real statements coming from policy positions that even acknowledge there was a problem that could not be handled by conversion and dual use.

Dr. CAPORALI. Senator, if I might, there has been some considerable dialog and advice sought with respect to maintaining a defense industrial base. But I cannot think of the complement of that, of any discussion.

Mr. DANKANYIN. Mr. Chairman, if I might, I am all for technology. I think in the long run there is true value that can be gained here. We are looking at things that can be done in the short term, and I submit that going through the typical procurement process of issuing RFP's, evaluating proposals, awarding contracts, letting bureaucrats determine which technologies will fit the market, is a long drawn-out, inefficient process, which ultimately may yield some long-term benefit but not nearly the short-term benefits that we need.

I think immediate incentives to industry in the form of tax credits for investment, for capital, will spur industry immediately to go find out how the technologies fit the marketplace and could be a much shorter term response to the downturn in the economy.

SEED MONEY

Senator INOUYE. All of you have come forth with specific suggestions.

Dr. Caporali, you led off with creating markets, which makes good sense. Senator Stevens will have a series of questions on that, so I will not touch on that, but you spoke of seed money. How would you suggest that seed money be dispersed?

Dr. CAPORALI. I spoke of seed money in the same context as much of the discussion on dual-use technologies. These are funds that are not inconsequential—but they will not, in and of themselves, provide large numbers of jobs. They could, however, cause something to happen that will then cause an industry to develop, or cause a market to develop.

Now, how should that money be dispensed? Frankly, I am not really sure. In fact, that is one of the largest concerns I have.

I happened to be in a meeting not too long ago where there was discussion about these funds becoming available. I watched a number of agencies, some in being and some that wanted to come into being, essentially scrambling, each saying that they are the ones that ought to get in there and be involved in distributing those funds.

The thing that came to my mind, frankly, was that one-half of this money is going to stick to fingers on the way through before it ever gets to where it can really do some good.

I honestly do not know how it can be handled. I do not really think it is something that ought to be taken on by the Department of Defense. Possibly it should be taken on by Commerce. It will have to be handled very carefully if it is to have any lasting value beyond the formation of agencies which, as you well know, somehow never want to go away.

TAX AREA

Senator INOUYE. We have learned that, sir.

All of you have touched upon tax as an area that should be looked into very carefully—tax incentive, tax reductions and such.

I am going to ask all three of you to give us suggestions on the tax area.

Dr. CAPORALI. Do you want to start with me, sir?

Senator INOUYE. Yes, sir.

TAX INCENTIVES

Dr. CAPORALI. Well, here again, it becomes a situation of trying to hasten or spur some activity. Tax incentives can help an industry try to get into new areas. Investment tax credits, for example, have already been mentioned here this morning. You could expect that would do some good.

I would have to add, though, as I said earlier, that I don't think these types of activities will be able to do the size of job that people would like to have done in the time that people would like it to happen. There will be a fair amount of delay, because you are still talking about having to build new industries, or about having to develop new markets. That will not happen overnight.

Senator INOUYE. Mr. Turner.

TAX INVESTMENT CREDIT

Mr. TURNER. Mine is a little different approach, Mr. Chairman. Tax investment credit, where it may be beneficial to some, has very little appeal to me, because I have already invested in an infrastructure that has the capacity for many times the actual full procurement, as do some others in the industry.

If you look at the shipbuilding industry in the larger perspective, and myself in specific, what we need is a package that will benefit the economy so that we can transition many of the people who will be leaving us into jobs.

We have heard a lot of talk about training. We can end up with a person who already has a skill getting trained for the second skill and still not have a job if we do not do something on the jobs front.

Some of my colleagues in the shipbuilding business—at least one of whom is in the room this morning—have said that to compete internationally we need a level playing field. Now, that is not a tax situation, but it is of sort, because they are not able to compete because of the support that foreign governments give the competing shipbuilders. I do not compete against them, but I do have enough contacts with these persons.

So I would point that out that there is a bill going through that does address at least this in part by Senator Mikulski and others in the Senate and Congressman Gibbons in the House, so I think it is not just a tax. One type of tax approach may help investment in one area, as maybe with my colleague from Hughes, but it is certainly not something I need.

I need something that helps the economy grow so that there are jobs these people can migrate to, or either products, and demand increases that we could shift to, if that be the case.

Senator INOUYE. Mr. Dankanyin.

Mr. DANKANYIN. Let me just try to comment on the industry in general. What is happening to the industry in a decreasing defense budget is greater competition for the programs that are out there. Sales are going down. As revenues go down, earnings go down.

In this time of decreasing earnings, when investment is required to build and develop new products and to define new markets, we are being hit with increased taxes on top of that, making even less earnings available for new product development and for creating new markets.

I think in general, especially for the smaller contractors, some type of tax incentive not based on differential investment—because investments are going down as the defense industry shrinks—but based on total investment would really make sense to spur new product development, investment in R&D, and investment in the new capital it takes to take on these commercial markets.

I agree with my colleague, it must be a part of an integrated industrial policy that includes helping us with exports and other things.

SPECIAL TASK FORCE

Senator INOUYE. I have many other questions that I would like to ask, and I may come back again, but before I call upon my other colleague from Alaska, would it be possible for the three of you together with others that you may include to form a special task force for us, for this committee, and come up with recommendations as to what we can do, not just this subcommittee but the Congress, covering exports, creation of markets, tax relief, training, dual technology, et cetera? Would that be possible?

Dr. CAPORALI. I am sure it would be, sir.

Senator INOUYE. Could I call upon you to do that for us?

Mr. TURNER. We would be pleased to work with you, Mr. Chairman.

Senator INOUYE. I leave it up to you as to who you want to include. My only request is that we get a report by July 31, because after that we begin marking up. If you can do that, it would be a great help to us, sir.

Senator Stevens.

Senator STEVENS. Thank you. Along that line, I have asked the staff to provide you with a copy of the list that was provided to us by Dr. Perry when he appeared on the defense reinvestment economic growth initiatives, and as you comply with I think the suggestion of the chairman, or respond, I should say, rather than comply, but if you respond, I would appreciate it if you would tell us what priorities you would give to these programs. Are these priorities right, and are there any of these programs that you would readjust in terms of financing?

We are going to spend $1.6 billion, if we fund fully this defense reinvestment economic growth initiative. I would like to be assured that the money is allocated in the areas that industry believes it will be effective.

RESEARCH DEVELOPMENT CORPORATIONS

Second, let me ask you all this question. We put up the same amount of money, roughly, for the federally funded research development corporations. I do not know if you are familiar with them.

They have been reviewing for years the plans of the Department of Defense to see whether they make sense, and we understand that they check a lot of items where there might be difficulty in the Defense Department submitting to the private sector directly for comment.

What if we mandated these federally funded research development corporations to use a portion of their money that will be provided this year to give us advice on the same subject of how can we effect a better dual-use policy, and how can we proceed to declassify some of the systems that could have civilian application?

Are you familiar enough with the FFRDC's to tell me whether that would be effective?

Do you know them, Doctor?

Dr. CAPORALI. I am not familiar with them. I will try to become familiar with them and try to get something to you.

Senator STEVENS. Well, there are three of them, Lincoln Labs, MITRE, and Aerospace. They take about $1.1 billion of that money, and the roughly, $400 million to $500 million is separated down into 12 others, I believe, 11 or 12 other groups like RAND.

RAND is one of them, and I should think that in those areas there are people that have been cleared that know some of the systems that we have previously approved and have funded for the Department of Defense and have the ability to look at those and tell us what might have civilian application.

I would like to get some advice coming back from them. They are people we have spent a lot of money with in the past, giving advice to DOD on how to produce defense items. I think we ought to turn to them and say, Are there any of these things you have reviewed in the past that could have civilian application?

You know about some of them; we do not. You know about some of them that you have had in your systems.

Mr. Turner, are you familiar with them?

Mr. TURNER. I am familiar with those in my particular industry and, as you well know, this body and others have addressed the technology transfer issue as it relates to nuclear submarines, and there is a very definite and straightforward and easily understood policy within OSD and the Department of Navy relative to that. I shall not repeat further on that.

I would pick up, Senator Stevens, on one of your other questions, and I believe it—part of the question, related to the investment in technology into various industries. And I believe part of this would be the ARPA funds that are being addressed for insertion of technology or for the assistance of industry.

The problem as I see it, at least in part, and we all come from our own direction, but I see in the shipbuilding, if I can take that in its bigger context, is trying to understand what are the real needs as we go forward for the defense industrial base. What are the needs going to be for the fast sealift, and the support? What can we do relative to the capacity we then have and which will be excess to those needs? How much is that? How can we enter it into the world market?

Until we get some of these policies and questions worked out, we may be chasing false rainbows in investing in very specific technologies, because you may be going after a technology that there is no market need for with a particular shipyard or what-have-you.

I would suggest to you that the needs of the various shipyards are quite different relative to the markets that they may be going into, based on whether they are in major combatants or minor combatants, whether they are in auxiliaries, or whether they are still struggling with repair, and what—one or two commercial ships have been built in the last 10 years.

Senator STEVENS. We have a vote, so I need to move on faster. Do you have a comment on that, sir?

Mr. DANKANYIN. Sir, I am not that familiar with these. I do not feel qualified to respond.

BID ON FOREIGN CONTRACTS FOR NONNUCLEAR CONVENTIONAL SUBS

Senator STEVENS. My last question would be, 2 years ago I urged the Senate to include and we did include a provision that encouraged the Navy to support U.S. shipyards bidding for contracts abroad, particularly submarines for U.S. allies. They are out there—Israel, Australia, Taiwan, Egypt, and others have bought from European yards because of the current policy of the Navy. I understand industry said they did not want that authority.

Mr. Turner, is that right, you do not want the right to bid on foreign contracts for nonnuclear conventional subs?

Mr. TURNER. Any work that I am capable of doing, I'd like to do. I do not ever remember saying I did not want to bid on it. At the same time, I cannot bid on foreign work with the idea that I will have my basic work cut off, because once that is gone, I am not going to be able to compete with a foreign shipyard that already has a design complete, in fact, in production.

So to bid on it is not something that would be very profitable, particularly when I have a policy statement that is certainly not any secret relative to the U.S. Navy's position on it, and then an infrastructure with several shipbuilders in Europe who are building submarines for many countries around the world, as well as they are now coming out of the former Soviet Union and so forth. To go into a business we are not in, would not be very effective to go bid on that.

If it happened to be in an FMS environment to an allied nation and could be handled as other FM sales are, then it would be something I would be interested in. So I am categorically on the one hand not opposed to doing it from my point of view, but on the other hand I do not see how, within the framework and the rules we are dealing with where it is possible.

SEAWOLFS

Senator STEVENS. Well, we end up with a shipbuilding industry that is practically nonexistent because we pursued a similar policy, Mr. Turner.

If you want to continue to build Seawolfs, the only one in the world to build them, and we will probably be able to afford one about every 4 or 5 years, then I suggest you are going to join the past manufacturers of commercial shipping in this country.

I do not understand that policy, but if that is the industry policy and the Navy policy, we are just going to have to witness it, because we cannot force you to build for foreign markets, and I am an offensive guy once in a while. Maybe you do not want to compete with them, Mr. Turner. They are building submarines for the world market, but you have never done that. You have only built for the U.S market.

Mr. TURNER. I will compete with them, Senator Stevens, given a basis that I am in production on a given product versus they being on it. I will go head to head with anyone, but I cannot start with no design, with no experience, with no tools, jigs, and fixtures for a particular design and go out and compete. Nor can anyone else for that matter.

Senator STEVENS. If we stop building Seawolfs, the only market in the world will be for nonnuclear submarines, right?

Mr. TURNER. I do not know what the market will be, sir. That certainly could be the case.

Senator STEVENS. By definition—well, I am not going to pursue that. By definition the only market that is going to be out there is nonnuclear submarines for the future, except for the Seawolf.

Thank you, Mr. Chairman.

Senator INOUYE. Senator Domenici.

Senator DOMENICI. Mr. Chairman, thank you. Thank you, Senator Stevens. Obviously, we have to leave shortly. Might I ask permission of the Chair to submit a question in writing to Secretary Deutch with reference to a conversion notion for White Sands Mission Range?

Senator INOUYE. I have already advised the Secretary that questions will be submitted.

Senator DOMENICI. I thank you.

NEED FOR ECONOMIC GROWTH

Mr. Chairman, I want to make just a couple of points for the record. Frankly, which of our witnesses—I think it was Mr. Turner that said, and I am paraphrasing, the only way to get really effective conversion is to get the American economy growing at a very steady rate, adding thousands of new jobs every month.

Senator INOUYE. I believe all three of them said that.

Senator DOMENICI. I do not think we are really going to effect a conversion of the type that some are running around trying to make people believe with Federal programs. We do not have enough billions to keep all of the employees that are currently planned, or already have been removed, because the Government stopped programs, stopped defense programs—an impossibility.

But it does seem to me that the prior administration and thus far this one have done perilously little to ask the industry what might be best.

I commend you, Mr. Chairman. I mean, first of all, I am not just saying this for this President, but President Bush's administration, in response to a law that said, put a group together and begin to plan, lo and behold a Republican administration put the entire Commission within the bureaucracy. I do not know if you know that, but is that not right, Mr. Chairman? The first Commission was all members of the bureaucracy of the Federal Government.

Well, they know a lot, but what do they know about how to make transitions in the private sector and which programs might help most, and if you look at what is out there, the competition for $8, $10, and $12 million here and there, spread around in a manner to make sure that every geographic area that has elected officials gets some of it is going to spend Federal money, but whether it is going to produce anything good for the thousands of people that you are going to have to lay off is very, very questionable, so I would hope that you would spare no ideas in making some recommendations.

TRANSITION TAX ASSISTANCE

Frankly, I believe if you are going to make transitions, we have got to give you some tax assistance in the meantime, or some way to get through when you gamble on your part, which would be to tool up for something different, or to retrain and try a new product.

That is not easy for industry, and the sooner we know some of those things—where they will fit in this process, I do not know. We cannot put that in an appropriation bill, but I think if we got some good ideas, they might be accepted by somebody around here, Mr. Chairman.

Senator INOUYE. Well, I think—I am anticipating a report, and when that report comes in, I am most certainly going to share it with my colleagues and other committees.

Right now, for example, we have a tax bill, and I am going to make certain that our tax committee has the full import of the report before them.

I am rather disappointed that we have not called upon industry to make appropriate and important input in setting up this defense conversion program. I was disappointed when the last administration appointed a commission made up of DOD personnel. I thought, well, that is the beginning of the end.

Senator DOMENICI. I do not know that it has greatly improved. Maybe it has improved some, but I do not know that it has greatly improved, even to this day.

Senator INOUYE. Well, just about 20 minutes ago we developed our own defense conversion commission, so—and the three members are sitting right in front of us here, and we will see how well you can do, so I am really looking forward to receiving that report, and I can assure you that we will not only receive it, but we will study it, and do not be surprised if you see many of your recommendations popping up in our measure.

With that, I would like to thank you for your candor and suggestions. I can assure you that your contribution is most appreciated.

SUBCOMMITTEE RECESS

We will stand in recess until June 8.

Thank you very much.

[Whereupon, at 12 noon, Thursday, May 27, the subcommittee was recessed, to reconvene at 10 a.m., Tuesday, June 8.]

DEPARTMENT OF DEFENSE APPROPRIATIONS FOR FISCAL YEAR 1994

THURSDAY, JULY 15, 1993

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 3:08 p.m., in room SD–192, Dirksen Senate Office Building, Hon. Daniel K. Inouye (chairman) presiding.

Present: Senators Inouye, DeConcini, Stevens, and Bond.

DEPARTMENT OF DEFENSE

COUNTERNARCOTICS EFFORT

STATEMENT OF GEN. GEORGE A. JOULWAN, COMMANDER IN CHIEF, U.S. SOUTHERN COMMAND

OPENING STATEMENT OF SENATOR INOUYE

Senator INOUYE. Today's hearing will highlight the Department of Defense's role in stemming the flow of illegal narcotics into this country. As all of us know, the Department of Defense has been the lead agency in the detection and monitoring of illegal drugs smuggled into this country by air and sea since 1989.

DOD's detection and monitoring efforts are indeed noteworthy. Since assuming this responsibility, the Department has played an integral role in this Nation's attempt to slow down the incursion of illegal drugs into American society.

This effort is a dual-sided problem. We need to be able to detect and interdict the illegal narcotics entering into this country as well as educate America's children about the dangers of using illegal narcotics. In this vein, I wish to commend the Department for its efforts toward educating schoolchildren in local communities about the perils of using drugs. These activities are done on a strictly voluntary basis and have been highly successful. So I encourage you, General, and members of your staff to continue these programs and hope that in time the Department will be able to expand its role in this endeavor.

For fiscal year 1994, DOD has requested over $1 billion. This request will fund critical civilian and military personnel, as well as air, land, and sea operations needed to carry out these important responsibilities. The fiscal year 1994 request is over $100 million more than last year's level, and this subcommittee is carefully examining DOD's justification to increase funding for this program.

As I previously stated, I commend the Department's efforts in this area. However, I am discouraged that, while the Department's detection and monitoring efforts have expanded and funding has increased over 400 percent in the last 4 years, interdiction has remained static.

Because of this, it is incumbent upon this committee to attempt to determine what can be done to improve this situation. Determining solutions to this problem is even more critical in a period of declining budgets.

General Joulwan, as Commander in Chief of SOUTHCOM, your views in this area obviously are extremely valuable to us and I hope that you will be able to provide this committee will some insight into your accomplishments, the effectiveness of SOUTHCOM's activities, and your future plans to combat the smuggling of illegal drugs into this country.

Before we hear from you, sir, I am certain that the prime mover in the U.S. Senate on matters of this nature, Senator DeConcini, would like to make a few opening remarks, and after that I will call upon Senator Bond. All of us are aware of Senator DeConcini's efforts and we look to him this year, as we have in the past, as our moving force.

Senator DeConcini.

REMARKS OF SENATOR DE CONCINI

Senator DeConcini. Thank you, Mr. Chairman. I am most appreciative and grateful for your taking the time in your busy schedule as the chairman of the Subcommittee on Defense to hold these hearings today on the Department of Defense counternarcotics activities, and particularly the Southern Command and its area of responsibilities. I am especially pleased that General Joulwan, the Commander in Chief of SOUTHCOM, could be with us to discuss the program's activities.

General, I have spoken with you on a number of occasions. I have spoken of your support for the air interdiction activities and the Custom's P–3 Program in Central and South America in my hearings. It is indeed a pleasure to have you here today and to listen to you.

Your firsthand knowledge of drug interdiction, detection, monitoring, surveillance, and training for source country law enforcement is unequaled and I believe the committee will greatly benefit from your unique perspective.

There are some who believe that drug interdiction is a waste of money, uneconomical, and is not showing any results. From the briefings I received from you and other representatives of the Customs Service and the U.S. Ambassador to Colombia, Morris Busby, I am convinced that the program is working, that source countries—Colombia in particular—are showing tremendous success in fighting narcotraffickers and exhibiting unparalleled courage.

I fear that without continued sustained U.S. involvement and support we will never significantly curb the lucrative business which has led to the destruction of democracies in Central and South America and which are threatening the citizens of the United States.

So, General, I look forward to the hearing today, and I know that you have made counternarcotics your No. 1 priority. I commend you for your tenacity in this struggle.

Thank you, Mr. Chairman.

Senator INOUYE. Thank you. May I call upon the vice chairman of this committee?

Senator STEVENS. Thank you very much. I am sorry to be late. I am involved in another committee, but I did want to come by and pay my respects to the General and to reaffirm our support for your activities.

I would like to ask just one question, if I may. I will not ask the question now, but if you could include at some time in your statement, General, an indication of how important is intelligence to the operations that you conduct in terms of this threat, and what relationship, if any, does it have to the increasing terrorist threat in this country.

That is the reason I came by. I would like to see that in the record, if I could. I do have to go back to this other negotiation. Thank you very much.

Senator INOUYE. Senator Bond.

Senator BOND. Thank you, Mr. Chairman. As a member of this committee and as ranking member with Senator DeConcini on Treasury/Postal, where we have a number of related activities, I am most interested and appreciate the chance to hear what the General has to say.

Senator INOUYE. Thank you very much.

I would like to do something which is a bit unusual. I usually preside over all of our activities, but since Senator DeConcini is such a moving force in this area I will ask him to take over the gavel. I will be sitting here observing and listening and asking questions.

NEW ROLE OF MILITARY

I would just like to make one observation, General. What we will be discussing today is just another example of the new military. We have been called upon to participate in activities which up until recently were riot considered military in nature. This is one of them, as well as Somalia, peacekeeping, and all of the activities of that nature. Now we are being called upon to assist the Russians.

I, for one, as chairman of the committee, am becoming a bit concerned about the proliferation, if I may use that word, of our scarce funds, because I am concerned about the primary mission of this committee, and that is to maintain the readiness of our forces. But the work you are doing, as I indicated in my statement, is important. It is of national significance and concern. So I wish to, on behalf of the committee, thank you for what you are doing and to commend you for your work.

Senator DeConcini, would you like to take over?

Senator DECONCINI [presiding]. General Joulwan, you may proceed on whatever your statements are and than I do have some questions and I am sure other members do.

Thank you, Mr. Chairman.

OVERVIEW STATEMENT

General JOULWAN. Mr. Chairman, distinguished members of the subcommittee, I am honored to appear before you today to update you on the counterdrug efforts in the U.S. Southern Command.

At the outset, let me personally thank you, Mr. Chairman and members of your committee, for your interest in not only my command but, in particular, your commitment to our Nation's war on drugs.

Mr. Chairman, although I am appearing alone today, I want to make it clear that the counterdrug fight in my area is a team fight, and I am a member of that team. It is important for me to make the point that this is really truly an interagency effort, with DOD in a supporting role not in the lead, and after 2½ years in command it is clear to me that to win this fight will take the efforts of all the different agencies of Government, to include the military and the Congress, working together as one team, with one clear, focused objective.

My purpose here today is to share with you my assessment of where we are in SOUTHCOM in this fight and I have prepared a statement that, if you concur, I would like to enter into the record and then briefly summarize.

I have been asked by Senator DeConcini to show a videotape that I showed him when he was in SOUTHCOM. It is classified, so, with your concurrence, I would like to show that first and then go into the open portion of the briefing.

Senator INOUYE. What level of classification is this?

General JOULWAN. I think we are all right at the secret level.

Senator INOUYE. Fine.

General JOULWAN. It will be a little bit out of sequence, but I think by showing this first it will set the stage for what I could refer to then in open testimony with schematic rather than showing some of our sources.

If I can get up and move around a little bit, Mr. Chairman, I have a series of briefing charts which I will explain in some detail in open session, but I must set the stage for this tape.

NARCO TRAFFICKING THREAT

The narcotrafficking threat is not limited to one country or one area. It is a huge criminal network that stretches primarily from the Andean Ridge in South America with tentacles that reach not only into our country but into Asia, into Europe, into Africa, all over the world. And I will try to explain that in the open portion of the briefing.

I want to concentrate now on what we identified as critical centers of gravity for the narco industry. One is the Chapare region of Bolivia, where 30 percent of the coca leaf is produced. It is a narrow area; it is definable. DEA has a Snowcap presence there and a law enforcement presence there in Bolivia.

The other 70 percent of the coca leaf is grown in the upper Huallaga Valley of Peru, again a definable area. Seventy percent of the coca that is turned from paste and base into final product is done in a definable area called the Valle del Cauca in Colombia.

I mention all of this because in this assessment I think we have to open up a look at the totality of how this criminal network operates.

Millions of gallons of chemicals come in from all over the world into the Andean area to make the paste and base in high-grade cocaine and then it is moved to thousands of flights all over the world.

COUNTERNARCOTICS INTELLIGENCE

I am going to show these in more detail later. For the present, this is an attempt to show that Chapare region in Bolivia—30 percent here, 70 percent here—and the processing is done in this Valle del Cauca. Cali sits about right here, and Medellin sits at the northern end of it.

[Deleted.]

It takes about 4 or 5 minutes.

HOST NATION COUNTERNARCOTICS INTEGRATION

The key to remember is that the host nation is the one that has to conduct the end game.

[A videotape was shown.]

General JOULWAN. That does not happen every time, but what it gives you is that the procedures are in place for this to occur. We do not have the number of aircraft that we need in terms of continuous coverage with AWACS or P–3's, but we are getting better at synchronizing this with the host nations.

[Deleted.]

I have a second tape here which shows in the upper Huallaga Valley the Peruvians, and let me set the stage for this. It was at night. It was along a strip of road. The Peruvians, to demonstrate their national will—sometimes we are not getting that through up here, the will that these nations have to protect their sovereignty and to fight against the narcotraffickers.

Yes; there is corruption. Yes; there are some problems that we have to get through with the military. But there is more and more evidence that they are willing to do something about it.

[Deleted.]

[A videotape was shown.]

General JOULWAN. These are chemicals that were being shipped from the upper Huallaga to Colombia. Here is the road at night. You are going to see a white spot here. [Deleted.]

So the intent of all of this is to demonstrate the role that the Peruvians and the Colombians and the people in this region, if we work with them, if we treat them as allies and partners, will play. Those are the two tapes I wanted to show in closed session. And, with your permission, I would like to go—unless there are some questions on this.

Senator BOND. General, was it the marines from the ground, or was it from the air that shot it down?

General JOULWAN. [Deleted.]

Senator DECONCINI. General, there were no Americans with those marines?

General JOULWAN. No.

Senator DECONCINI. No DEA as part of the shooting down of that plane?

General JOULWAN. [Deleted.]

[Deleted.]

[A videotape was shown.]

General JOULWAN. [Deleted.]

Senator INOUYE. Where is this picture being taken from?

General JOULWAN. [Deleted.]

Here comes the narco aircraft in. Notice how quick they offload and move out. So we watch them follow the trucks and we tried to get the host nation to try to intercept the vehicle. This is, again, at night.

Senator INOUYE. How large is the air fleet?

General JOULWAN. Hundreds of aircraft—Turbocommanders. They fly from Bolivia and Peru with impunity. They have seized, in Support Justice, 40 aircraft, 30-some in Colombia alone.

Now watch. As soon as it taxis, vehicles pull up and they offload.

Senator INOUYE. Can they hear the aircraft?

General JOULWAN. [Deleted.]

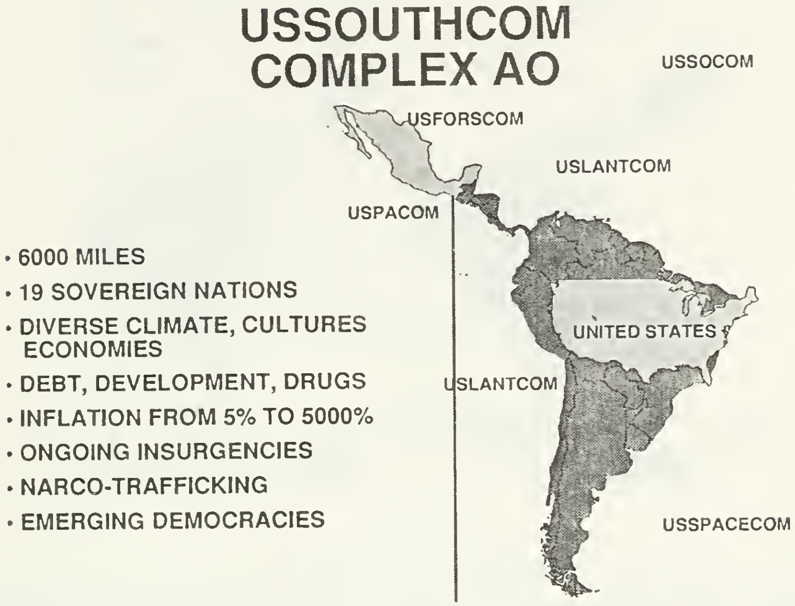
There goes the truck. They followed the truck. The point is that we are getting better at the intel collection that we are passing to the host nation, and what I want to demonstrate here is that this is the host nation effort and they have put in, as I will show you, a great deal more in terms of equipment and aircraft and patrol boats and ground effort than we have, and sometimes that is not understood.

Let me explain that, unless there are any questions in classified session about this.

[Whereupon, at 3:36 p.m., the subcommittee proceeded on the public record.]

OPEN SESSION

General JOULWAN. Sir, if I can start with an explanation on my area, it is a vast area, 6,000 miles.



USSOUTHCOM
COMPLEX AO

- 6000 MILES
- 19 SOVEREIGN NATIONS
- DIVERSE CLIMATE, CULTURES ECONOMIES
- DEBT, DEVELOPMENT, DRUGS
- INFLATION FROM 5% TO 5000%
- ONGOING INSURGENCIES
- NARCO-TRAFFICKING
- EMERGING DEMOCRACIES

CHART 1

You can see it with relationship to the United States. It has 19 sovereign countries, a series of challenges from insurgencies to narcotrafficking.

I might add that my area of responsibility is not just in the counterdrug area. We have seen the peace in El Salvador, after 10 years of a very difficult civil war. We are involved in implementing the Panama Canal treaties. We are also very heavily involved in promoting professionalism among the militaries of the region.

I would also like to point out, of all the CINC's involved, Forces Command works along the border with Mexico; LANTCOM has the Caribbean and the water; and the Pacific Command comes up to the Mexican-Guatemalan border. And so there are several CINC's involved in the area. I have the land mass that includes Central and South America.

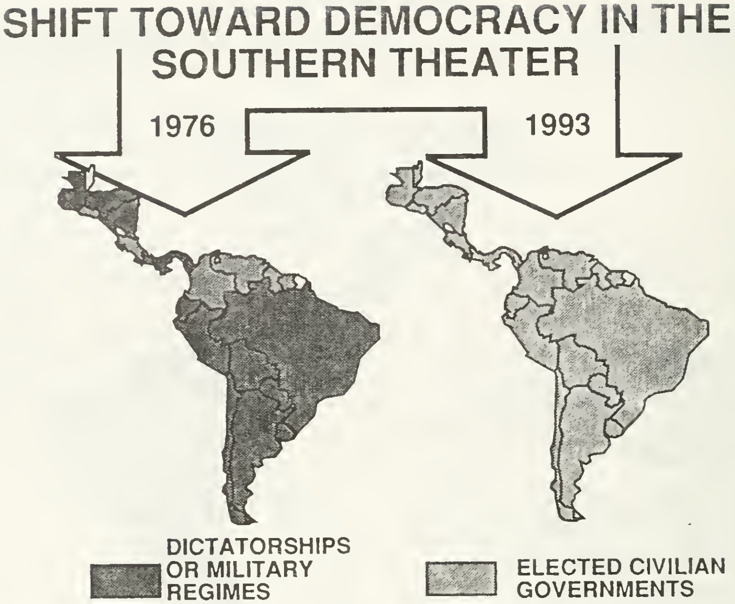

SHIFT TOWARD DEMOCRACY IN THE SOUTHERN THEATER
1976
1993
DICTATORSHIPS OR MILITARY REGIMES
ELECTED CIVILIAN GOVERNMENTS

CHART 2

DEMOCRATIC PROCESS

I think the positive side of all of this—and I think we need to put the drug fight in perspective—is that when you look at where we were in the seventies, there were only a handful of democracies in the region. Now, every country has some form of democratically elected leader; but these are fragile democracies. When you couple this with what happened in Eastern Europe and the former Soviet Union, there is really a move toward democratic governments.

The challenge here is that, as we do our counterdrug effort, as we do our other missions, how do we keep this blue without resorting back to the old regimes? And so our challenge in our strategy is to work with the host nation governments and military in a way that strengthens democratic institutions.

THE DRUG THREAT

- **DRUGS CAUSE CASUALTIES**
  - 10,000 KILLED IN U.S. EACH YEAR BY DRUGS
  - 5,000 REHAB PROGRAMS
  - 2,000,000 HARD CORE COCAINE ADDICTS*
  - 1,000,000 HARD CORE HEROIN ADDICTS*
  - 900,000 CRACK BABIES BORN IN LAST 3 YEARS*
- **DRUGS INCREASE CRIME, VIOLENCE, CORRUPTION**
- **DRUGS THREATEN FRAGILE DEMOCRACIES**
  - 25,000 VIOLENT DEATHS IN COLOMBIA. 400 POLICEMEN KILLED
  - EVERY NATION'S SOVEREIGNTY VIOLATED BY NARCOTRAFFICKER
  - NARCOS PAYING IN COCAINE NOT DOLLARS--DRUG CONSUMPTION UP THROUGHOUT LATIN AMERICA
  - SPREADING TO EUROPE, MIDDLE EAST, FORMER SOVIET UNION
- **NARCOTRAFFICKER GREATER THREAT TO DEMOCRACY I LATIN AMERICA THAN CUBAN AND SOVIET SUPPORTED SUBVERSION**

CHART 3

Now let me focus on the drug threat. We not only share a common border with Central and South America, we share a common threat.

Let me put this in some terminology, as I have tried to explain it to my staff: That the United States is taking casualties. We take about 10,000 killed by illegal drugs in the United States every year. A total of 900,000 drug-damaged babies are born. Americans, not Bosnians or Somalians, but Americans, are being killed, and drug-damaged babies being born every year.

Drugs increase crime and violence and corruption, primarily in Central and South America; and they threaten those fragile democracies that I have talked about. Colombians are paying a terrific price. I remember when the murders in Washington went above 200; it was a national outcry. In the city of Medellin last year, 6,000 murders; and over 25,000 murders in Colombia last year, and 400 policemen killed; Supreme Court justices killed. A high level of violence.

Every country's sovereignty is being violated by the narcotrafficker, and Mr. Chairman, he is paying in cocaine, not dollars. As he flooded the market here, early, when marijuana was the drug of choice, he flooded it with cocaine; he is doing the same thing in Central and South America. He is paying off those helping him in cocaine, not dollars.

And in Guatemala, they are selling that cocaine in downtown Guatemala City, in Belize City, in Panama City. Crime and violence are up, drug addiction is up, crack babies are being born in all of Central and South America; and it is spreading to Europe, the Middle East, and as I said in my statement, they recently seized a billion-dollar shipment in St. Petersburg, Russia. And the shipment came from Cali, Colombia.

And I said, and I will say it again, that I think the narcotrafficking threat is a greater threat to democracy in Central and South America than that posed in the past by Cuban and Soviet supported subversion. So it is a real threat.

And the chemical that is killing thousands of Americans, North, Central and South, is coming from a very small, definable area in the Andean countries.

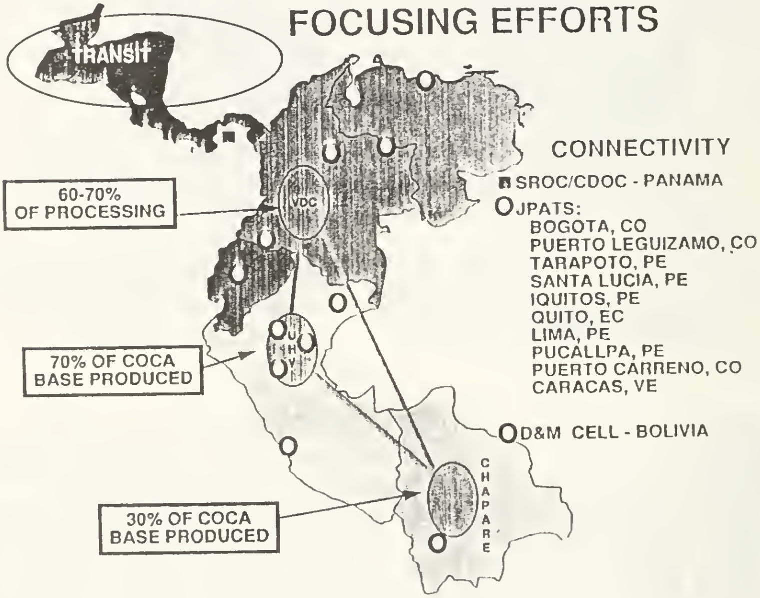


CHART 4

NARCO TRAFFICKING THREAT

I mentioned this threat before, and I will put it back up here to show how it starts here in the Chapare and in the upper Huallaga, and it is processed primarily in Colombia. We are very disturbed about what we see in Brazil and there have just been some recent large seizures in Brazil. But as we put pressure here, we see more transiting out, up in that direction, and primarily in many cases headed toward Europe.

But this is a vast criminal network. It brutalizes, it corrupts, it is violent. And it is something that needs to be understood. They have a lot of resources and they overpower any one country. Let me show you this in another way, to show why my assessment said, though we have to put a lot of effort on the demand side, and we are.

DRUG FLOW TO THE U.S.

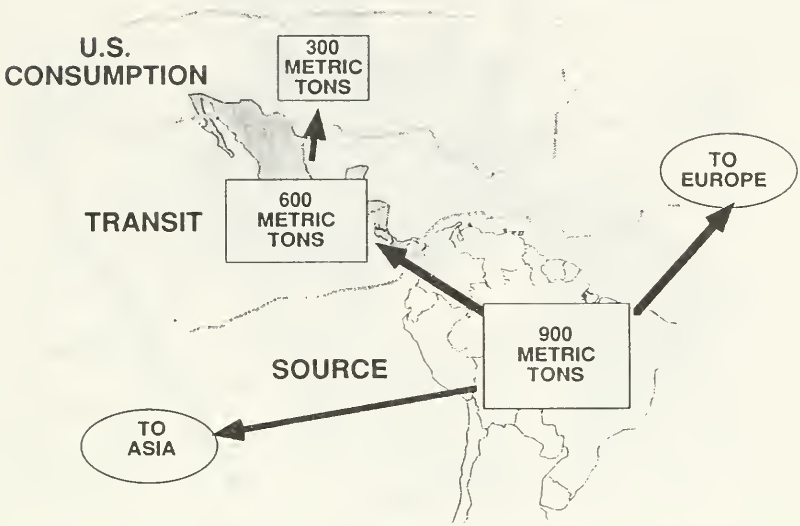


CHART 5

Ninety percent of our effort goes on the demand side. But I have to give clear advice, and my advice in the assessment says that the demand of the United States is about 300 metric tons. That is the estimate. The estimated production is between 900 and 1,100 metric tons. And our intelligence says that we can document about 600 metric tons getting through into Central America, into the transiting zone. After interdicting about 200 metric tons, about 300 gets into the United States. Much of it, or some of it, now is staying in Central and South America; and much of it is going to Asia and also to Europe.

But the point is that, unless you threaten this, they will outproduce you. And that is what is happening. So, while there has to be a great effort here to reduce the demand, and we have that going on, my recommendation is that we have got to work with the countries of the region in order to stem the flow of drugs into the United States; and also, to shore up these fragile democracies in Central and South America.

This, to me, is key to understand. And I have talked to the law enforcement folks as well. That is why DEA has an operation in Bolivia and Peru, two of those centers of gravity I have talked about. But in the end, it will take the host nations working together in a regional effort in order to really put a dent in this very, very sophisticated criminal operation, producing illegal drugs.

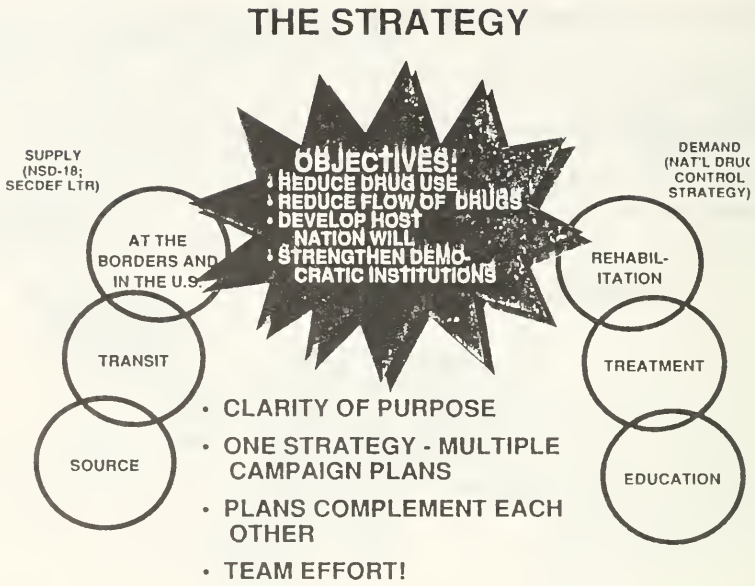

THE STRATEGY
SUPPLY (NSD-18; SECDEF LTR)
OBJECTIVES!
• REDUCE DRUG USE
• REDUCE FLOW OF DRUGS
• DEVELOP HOST NATION WILL
• STRENGTHEN DEMOCRATIC INSTITUTIONS
DEMAND (NAT'L DRU CONTROL STRATEGY)
AT THE BORDERS AND IN THE U.S.
TRANSIT
SOURCE
REHABILITATION
TREATMENT
EDUCATION
• CLARITY OF PURPOSE
• ONE STRATEGY - MULTIPLE CAMPAIGN PLANS
• PLANS COMPLEMENT EACH OTHER
• TEAM EFFORT!

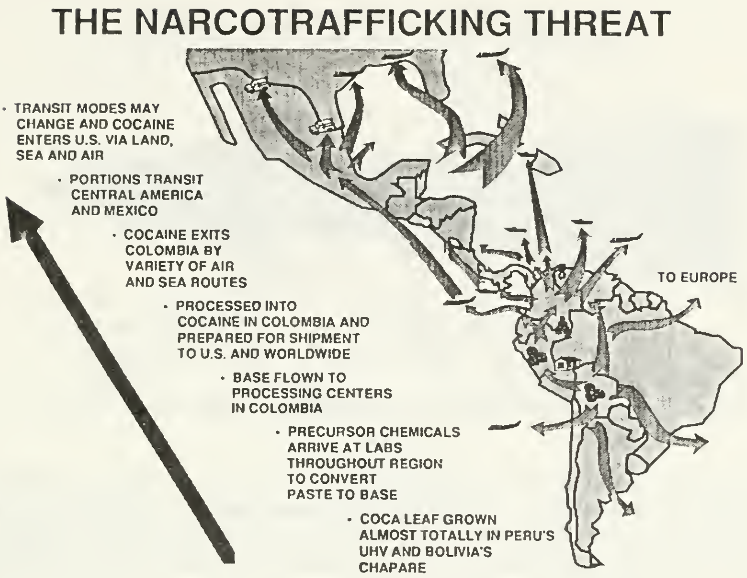
Chart 6

COUNTERNARCOTICS STRATEGY

So, in terms of a strategy, what I want to show here is an attempt to look at what we have been talking about, for definition. We talk about demand side and supply side. What I am urging is one strategy that looks at both demand and supply, integrated together, with clarity on what we are trying to do. As I understand it, of the $12 billion, 90 percent goes over into the demand side on education, treatment, rehabilitation, and law enforcement.

On this side, on the supply side, it really includes what occurs at the borders and in the United States in transit and at the source. And really, what I have been talking about is one component of this; and that is at the source. The funding for that on the DOD side of the $1.2 or $1.3 billion, the majority of it, about $600 million, goes at the border; about $400 million here; and around $200 million at the source.

So understanding where the priority is, this is the last priority. Even though the former NSD–18 said this would be the priority effort of the Andean Ridge, that is not where the resources are going. Let me show that another way, in terms of focus.



THE NARCOTRAFFICKING THREAT

- TRANSIT MODES MAY CHANGE AND COCAINE ENTERS U.S. VIA LAND, SEA AND AIR
- PORTIONS TRANSIT CENTRAL AMERICA AND MEXICO
- COCAINE EXITS COLOMBIA BY VARIETY OF AIR AND SEA ROUTES
- PROCESSED INTO COCAINE IN COLOMBIA AND PREPARED FOR SHIPMENT TO U.S. AND WORLDWIDE
- BASE FLOWN TO PROCESSING CENTERS IN COLOMBIA
- PRECURSOR CHEMICALS ARRIVE AT LABS THROUGHOUT REGION TO CONVERT PASTE TO BASE
- COCA LEAF GROWN ALMOST TOTALLY IN PERU'S UHV AND BOLIVIA'S CHAPARE

CHART 7

In working with law enforcement, when we talk about the source area, what we are trying to focus on, Mr. Chairman, is the cartel leadership. This is part of the kingpin linear strategy. And we had a very good session with the entire team, all the agencies, including DEA. And in order to put the pressure on this leadership, which really operates out of Medellin, and out of Cali at this time, it takes not only air interdiction, which we have been talking about, but riverine alternate development crops, precursor chemicals, eradication, money laundering, all to put pressure on that cartel leadership.

And we are starting to see that pressure now in the region. They are starting to make mistakes and I think it is very, very important. The issue is: How do you create, in many respects, the host nation capability, in order to do something about it in the region? Let us put that arrow one up there, would you please?

COMBINED OPERATIONS

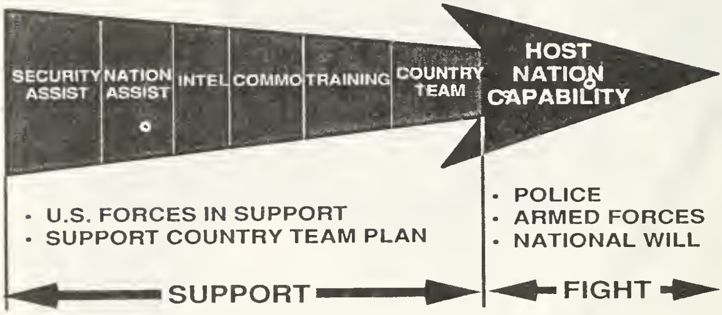


Chart 8

What we have tried to do is to create that host nation capability by focusing security assistance, nation assistance, intelligence, communications training, on a country team plan. As I said before, we are not in the lead. This is an ambassador's country team plan, the standup host nation capability, because they have to do the fighting. I am prohibited from putting ground forces in, in an actual fight role, in those nations. I could provide support, planning, training, communications, intelligence. But I cannot have them actually involved in field operations.

In NATO, we would have had 16 nations out here. In Desert Storm, 26 nations out here. Here, this has to be host nation. I am prohibited from putting military forces out there. But we could provide focused support. And it is standing up this host nation capability that I think is important in the host nations.

And to do that, you have to create mutual trust and confidence; you have to have a dialog that we are partners and allies and friends in this endeavor. And that we are sharing this with them. And what they want is this support. And what we are trying to do is develop the national will to get them to fight. I have shown you some demonstrations of that.

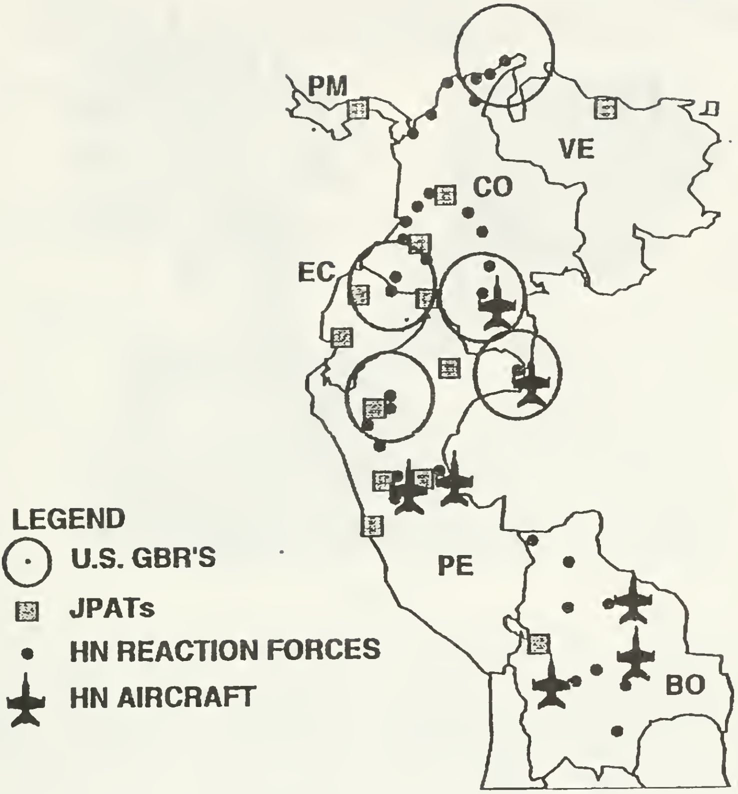


Chart 9

COUNTERDRUG SCORECARD

I mentioned about the centers of gravity. It is, how is the host nation going to use that capability in this area? How can we assist them? And we have got some planning assistance teams that work with the DEA in particular, and with host nations, to provide the kind of activity throughout the region, so that our own aircraft and platforms are protected; and we have seen some very good results.

This border now, between Ecuador, Colombia, and Peru is now transparent. As mentioned on the tape, we have customs P–3's that are forward based in Guayaquil, that fly with host nation Ecuadorans, Peruvians, and Colombians on board, following the aircraft from the upper Huallaga to the Valle del Cauca and back. That is a big breakthrough.

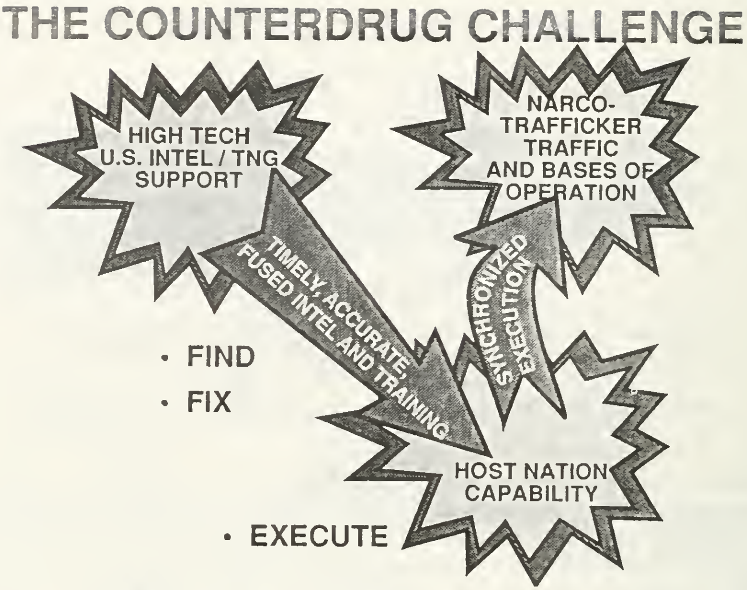
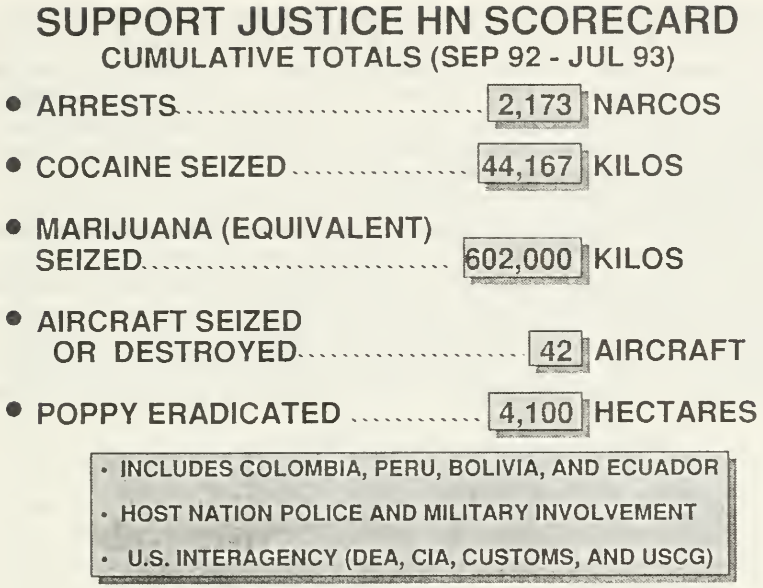

THE COUNTERDRUG CHALLENGE
HIGH TECH U.S. INTEL / TNG SUPPORT
NARCO-TRAFFICKER TRAFFIC AND BASES OF OPERATION
TIMELY, ACCURATE FUSED INTEL AND TRAINING
SYNCHRONIZED EXECUTION
• FIND
• FIX
HOST NATION CAPABILITY
• EXECUTE

Chart 10

HOST NATION CAPABILITY

But the challenge is, in developing that host nation capability, is how do you take high-technology intel and training support and pass that to the host nation in a real timely way so they can execute? This has been missing from our plan, from our strategy. So that is what we have tried to do. And we have tried to do that in a way that can create synergy and allow the end game to take place. Without this, all we have is the passing of information. So we came up with something called Operation Support Justice; and it was an interagency operation that we were trying to help put together, that included the host nations. And this is what it looks like.



SUPPORT JUSTICE HN SCORECARD

CUMULATIVE TOTALS (SEP 92 - JUL 93)

ARRESTS	2,173	NARCOS
COCAINE SEIZED	44,167	KILOS
MARIJUANA (EQUIVALENT) SEIZED	602,000	KILOS
AIRCRAFT SEIZED OR DESTROYED	42	AIRCRAFT
POPPY ERADICATED	4,100	HECTARES

- INCLUDES COLOMBIA, PERU, BOLIVIA, AND ECUADOR
- HOST NATION POLICE AND MILITARY INVOLVEMENT
- U.S. INTERAGENCY (DEA, CIA, CUSTOMS, AND USCG)

CHART 11

It was an attempt to bring the Venezuelans, the Colombians, the Ecuadorans, Peruvians, and Bolivian countries all together. Because what was happening is, the narcos would find a hole, whoever was involved, that is where they would go. So the intent was, given this, from the Chapare to those three centers of gravity, could we create the mutual trust and confidence and the working relationship in a regional sense, to get these nations to work together. The answer to that is, "Yes," after 2 years of working this.

These are the assets that the host nations themselves have committed to this fight. What they get from us is information. They get some cueing, we work through the embassy. We have intelligence teams with each embassy, to fuse the intelligence for them, and we are getting better at doing the predictive analysis of what needs to be done.

MUTUAL TRUST AND CONFIDENCE

Interestingly, Mr. Chairman, in promoting this regionalism, Venezuela and Colombia have conducted a combined operation—it is unprecedented—along their border, along the Orinoco River, and it is called the Vichada area, and they have had some great success up here. Colombia and Ecuador, along the Putumayo River, combined operations, working together, and they have had some excellent results here.

Ecuador and Peru have been in a state of war with each other for 50 years. As a result of our efforts, President Fujimori, and now President Sixto Duran have met. Fujimori has reduced forces along the border and put them in the upper Huallaga Valley. They are now sharing information and exchanging liaison officers.

And, as I said before, the border between all three is transparent. And I think this is a result of our involvement. Our piece of this, compared to what the other nations are putting in, is not as much as what the other nations are doing. But it is their fight; it is their sovereignty being violated. It is their judges, police, and military being corrupted; it is their children being addicted; and it is their democracy being threatened.

So I have met with 17 heads of state, and I have said: "What is your strategy? We will try to help." So we have made it their fight. I think what we need to do is provide them, where we can, some resources to carry on the fight. We have four radars, U.S. Air Force radars—two National Guard and two active Air Force radars—providing the sort of radar coverage along this air bridge. The Venezuelans soon will have three radars of their own across the center of Venezuela. And these are the assets that the host nations bring to it.

INTEGRATION OF COUNTERDRUG ASSETS

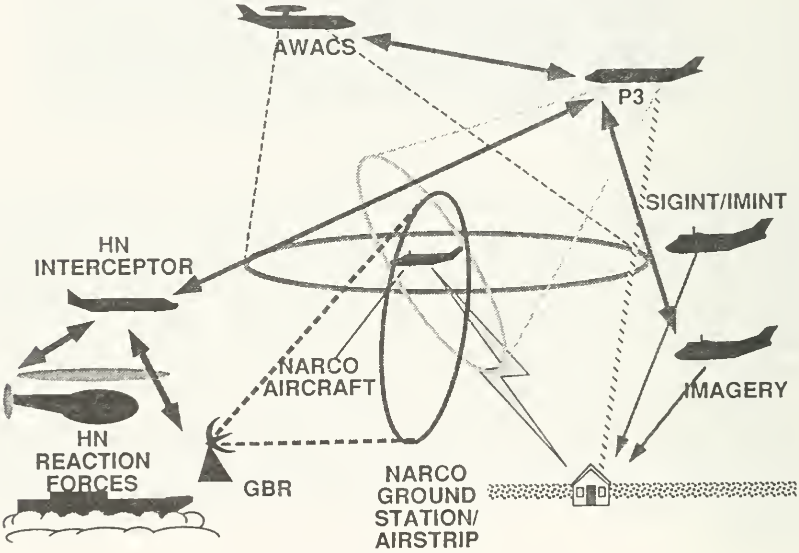


CHART 12

A pictorial of what I showed you before in the tape. This shows how all the different assets from the AWACS, the P–3, the SIGINT, and the imagery, working together, are able to pick up the narco aircraft and the ground station, and pass that to host nation forces in a way that they can act against it. And we are still in the embryonic stage of this; but again, the emphasis was on law enforcement, but it is how can we put these forces, in a way to make law enforcement more effective. And I think that is important.

[Chart 13 not suitable for printing.]

INCREASING WILL AND CAPABILITY

General JOULWAN. Let me give you a recent snapshot of what that looks like. Here is a period of time, a week; those 7 days. Here are those radars I talked about. What has happened is, because of the radars here and here, and the air bridge that I talked about, it has channeled the narco aircraft right into this narrow gap between both radars.

What we need now—we have got resources at both ends—we need host nation capability or tracking capability, or more tracking capability, let me put it that way, to track these to ground. We have identified this beehive of activity, of where he is coming and going from, and what we need now is to marry up what we have here in the Valle del Cauca and what the host nation has in the upper Huallaga, with trackers to be able to track these to ground, and cue the host nation forces onto them. This is where the P–3 comes in; this is where the Citation comes in; and this is where the T–47 can also be very, very useful in this effort.

But 2 years ago, this was a blank piece of paper. We now are able to force them, or channelize them in a way that, I think, makes them vulnerable. The next issue is: Can we raise the level of the game with the host nation, to take advantage of it? But these are chemicals, loaded for the United States; and if I could use my example, Scud missiles that are being launched against the United States, with chemicals on them. And this is the center, and the center of where the Scud missiles are coming from. So you could either sit back along the border and suck in the Scuds or the arrows, or go after the archer. And we now have good intelligence on where they are coming. How can we get the host nations to develop a capability and a will?

In Colombia, they are moving out. They have committed ground, air, and sea forces, coastal waters as well, in an effort to do this. They have seized, in Support Justice, 36 aircraft; 2 years ago, zero. And that is police and military working together.

Let me wrap this up, by showing you some of the things that have occurred on the larger seizures.

To show you the totality of how these chemicals—and this is just a snapshot of just what has occurred recently in 1993.

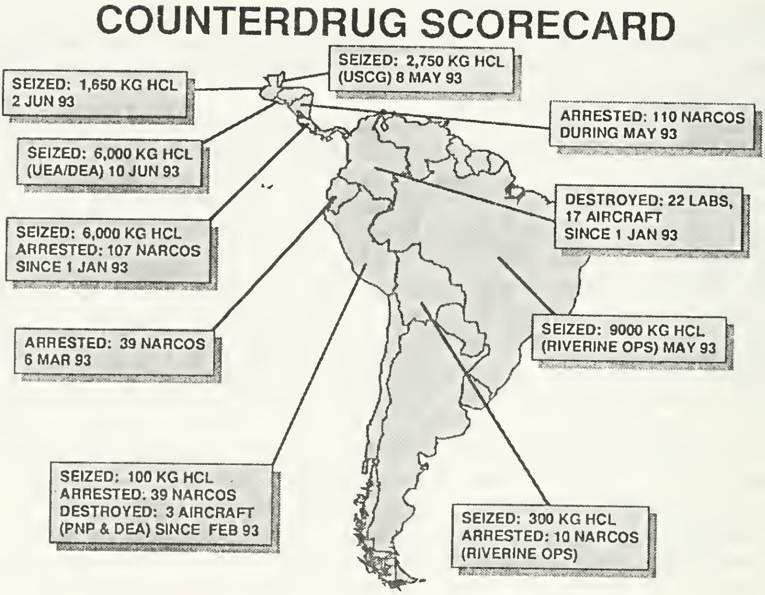

COUNTERDRUG SCORECARD
SEIZED: 2,750 KG HCL (USCG) 8 MAY 93
SEIZED: 1,650 KG HCL 2 JUN 93
ARRESTED: 110 NARCOS DURING MAY 93
SEIZED: 6,000 KG HCL (UEA/DEA) 10 JUN 93
DESTROYED: 22 LABS, 17 AIRCRAFT SINCE 1 JAN 93
SEIZED: 6,000 KG HCL ARRESTED: 107 NARCOS SINCE 1 JAN 93
SEIZED: 9000 KG HCL (RIVERINE OPS) MAY 93
ARRESTED: 39 NARCOS 6 MAR 93
SEIZED: 100 KG HCL ARRESTED: 39 NARCOS DESTROYED: 3 AIRCRAFT (PNP & DEA) SINCE FEB 93
SEIZED: 300 KG HCL ARRESTED: 10 NARCOS (RIVERINE OPS)

CHART 14

COUNTERDRUG SCORECARD

Just recently, 6,000 kilograms were seized in El Salvador. They are taking advantage of the ending of the war there, and this was right in San Salvador. We had a recent seizure in Colombia, which is not shown. On one seizure, 500 metric tons of marijuana. They also are growing heroin in Colombia and shipping it out in the same routes. And there is great interest now by the narcos in exporting heroin into the United States. But as you can see, it spreads throughout Central and South America. They just burned 9 tons of cocaine in Brazil.

COUNTERDRUG SCORECARD

CUMULATIVE TOTALS (SEP 92 - JUN 93)

• ARRESTS	2000	NARCOS
• SEIZURES:		
- COCAINE	43,000	KGS
- MARIJUANA	600,000	KGS
• AIRCRAFT SEIZED/DESTROYED	40	
• POPPY ERADICATED	4000	HECTARES

- INCLUDES COLOMBIA, PERU, BOLIVIA, & ECUADOR
  - HOST NATION POLICE AND MILITARY
  - U.S. INTERAGENCY (DEA, CIA, CUSTOMS, AND COAST GUARD)

CHART 15

So to summarize, Mr. Chairman, in the last 6 months in Support Justice in the Andean area, this is what we have been able to show. And notice I put arrests first, not seizures. The DEA and the law enforcement that we cooperate with and we share information with and we focus on: 2,060 arrests, 43,000 kilograms of cocaine, you can see 600,000 marijuana, over 40 aircraft destroyed.

When I first took over, the first briefing I got was the Colombians are not doing anything about returning aircraft. They are now. Again, embryonic, but we have got to build on it. And this poppy eradication is heroin that they are now starting to grow in the same area.

A TEAM EFFORT

And this is not SOUTHCOM. The point I want to make is it is a total team. The credit belongs to those nations, and it includes all other kinds of agencies; DEA, CIA, Customs, Coast Guard are all involved in this. It is one team involved in one fight.

THEATER STRATEGIC OBJECTIVES

- STRENGTHEN DEMOCRATIC INSTITUTIONS
- ASSIST HOST NATIONS IN ELIMINATING THREATS TO REGIONAL SECURITY
- SUPPORT CONTINUED ECONOMIC AND SOCIAL PROGRESS
- ASSIST HOST NATIONS IN DEFEATING NARCOTRAFFICKING
- ENSURE OPEN AND NEUTRAL PANAMA CANAL
- ENHANCE MILITARY PROFESSIONALISM

CHART 16

STRENGTHENING DEMOCRACY

And to ensure that we do not skew our objective in this counterdrug fight, our objective is still to ensure that we strengthen democratic institutions as we assist them in eliminating the threats to their own security and defeating the narco trafficking. But the litmus test for what we do is here.

BUMPS IN THE ROAD

AND A NEW RESPONSE FROM LATIN AMERICAN MILITARIES

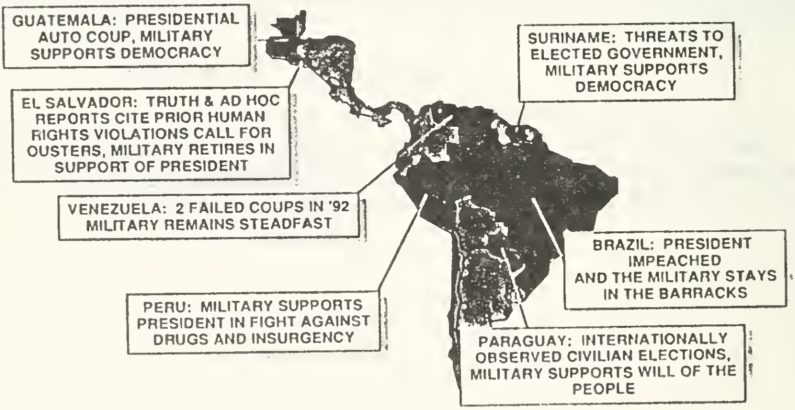

GUATEMALA: PRESIDENTIAL AUTO COUP, MILITARY SUPPORTS DEMOCRACY
SURINAME: THREATS TO ELECTED GOVERNMENT, MILITARY SUPPORTS DEMOCRACY
EL SALVADOR: TRUTH & AD HOC REPORTS CITE PRIOR HUMAN RIGHTS VIOLATIONS CALL FOR OUSTERS, MILITARY RETIRES IN SUPPORT OF PRESIDENT
VENEZUELA: 2 FAILED COUPS IN '92 MILITARY REMAINS STEADFAST
BRAZIL: PRESIDENT IMPEACHED AND THE MILITARY STAYS IN THE BARRACKS
PERU: MILITARY SUPPORTS PRESIDENT IN FIGHT AGAINST DRUGS AND INSURGENCY
PARAGUAY: INTERNATIONALLY OBSERVED CIVILIAN ELECTIONS, MILITARY SUPPORTS WILL OF THE PEOPLE

CHART 17

As a testimony to that, recently there have been a lot of challenges to democracy in Central and South America from Paraguay all the way recently to Guatemala. And the military has allowed that transition to democracy to take place. I think that is a direct result of our dialog with them and our involvement with them in this kind of a drug effort.

This is a threat that threatens the entire hemisphere, if not the world. This is something that we cannot just sit back in the United States. I believe we need to show interest in their efforts because it threatens these countries in a very direct way with violence, as well as addiction.

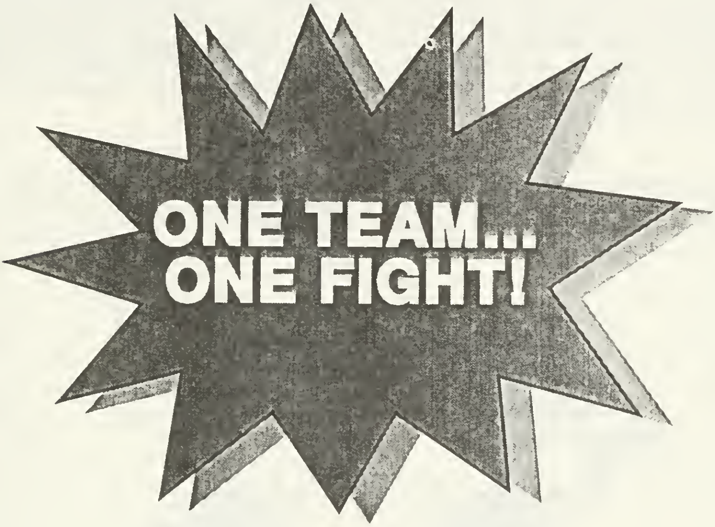

ONE TEAM...
ONE FIGHT!

CHART 18

And so, as a wrapup, I represent a member of a large team that is really involved in this fight. It is one team, it is one fight, and I am proud to be a part of that team, And I will be prepared to take any questions you have at this time, Mr. Chairman.

[The statement follows:]

STATEMENT OF GEN. GEORGE A. JOULWAN

INTRODUCTION

Mr. Chairman and distinguished members of the Subcommittee, I am honored to appear today to update you on the counterdrug efforts undertaken by the United States Southern Command. At the outset, let me personally thank you, Mr. Chairman, for your interest in my command and, in particular, for your commitment to our nation's war on drugs. Let me also make the point that although I am here representing the U.S. Southern Command, the war on drugs is truly an interagency effort, with DOD in a supporting role—not in the lead. And after two and a half years in command, it is clear to me that victory in this fight will require the efforts of all the different agencies of government—to include the military and congress—working together as one team with one clear focused objective.

To set the stage for you, let me first summarize the scope of the problem. In my view, drug trafficking is a greater threat to democracy in Central and South America than that posed in the past by Soviet and Cuban sponsored subversion. And, illegal narcotics are a significant threat to our nation as well, inflicting casualties and causing huge health care costs. Some of the figures are sobering:

—An estimated 10,000 drug-related deaths each year in the United States,

—Over 5,000 drug rehabilitation centers,

—2.7 million hard-core cocaine and heroin addicts,

—168 Billion dollars in collateral costs last year—health care, law enforcement, education, rehabilitation.

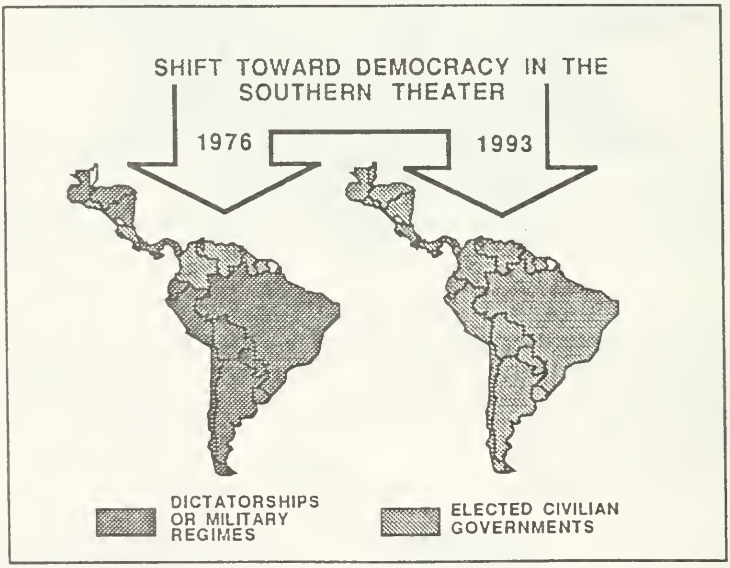
Clearly the drug trafficker is causing both American casualties and an enormous drain on our national health care resources.

Equally important, the nations of Latin America no longer view this as just a U.S. problem. Drugs dramatically affect their societies as well, resulting in corruption, violence, crime, and addiction. Cocaine kills and maims throughout the hemisphere and requires a coordinated regional approach to attack the threat at the source, in transit, and in the United States. To do so, we need to understand the Southern half of this hemisphere, its transition to democracy, the narcotrafficking threat, our strategy in attacking the threat, and an assessment of ongoing support operations.

Now that I have briefly summarized the problem, let me share with you my assessment of where we are in this fight. To do so, I will give you a theater overview; discuss the narcotrafficking threat as I see it; provide an analysis of the strategy, mission, and actions we are taking in support of host nation counterdrug operations; describe and assess regional operations; and, finally, emphasize programs and resources needing your support.

THEATER OVERVIEW

Latin America is an area that is vital to the national security of the United States. We have historic ties; we share a common border; and we also share a common threat—narcotrafficking.


SHIFT TOWARD DEMOCRACY IN THE SOUTHERN THEATER
1976
1993
DICTATORSHIPS OR MILITARY REGIMES
ELECTED CIVILIAN GOVERNMENTS

The defining characteristic of Latin America is the growth of democracy. Every nation in the AOR now possesses some form of civilian, democratically elected government. This is a significant achievement. The elected leaders of these nations are a new breed, committed to seeing democracy sustained, ready to confront challenges to their national sovereignty, dedicated to economic reform and to securing the benefits of freedom for their people, and ready to work with one another, and with us, to achieve these ends.

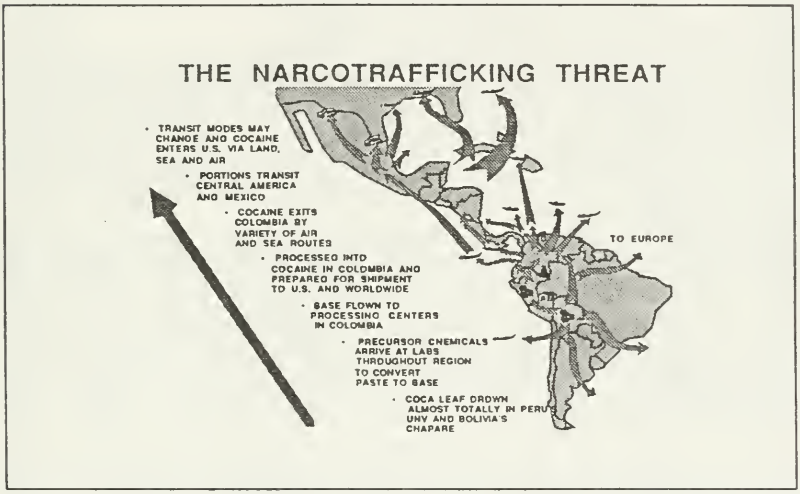
My optimism for the region is tempered, however, by the reality that democracy is fragile in Latin America. While the number of insurgencies in Latin America is declining, these internal threats still jeopardize the security and stability of these democracies. While progress is being made, there are still human rights violations and political violence in the region. While the economies are improving, unemployment and poverty rates remain high. Finally the militaries of the region, in many cases, require institutional changes necessary to contribute to sustaining democracy. In this environment, the insurgent and the narcotrafficker attack the very foundations of democracy in several key countries. How we as a nation assist the countries of Central and South America in meeting these challenges and maintaining forward progress in this decade will determine the true security of the United States in the 21st century. Nowhere is that challenge more important than in the war on illegal drugs and the narcotrafficking criminal empire.

NARCOTRAFFICKING THREAT

I can assure you that when I assumed command of United States Southern Command two and a half years ago, I had very little understanding of the size and scale of the narcotrafficking criminal element. It is huge; it is pervasive; it has unlimited resources; and its tentacles reach into every country in Latin America. Its scope of operations is worldwide. Let me be specific.

—100 percent of the cocaine consumed in the U.S. comes from Southern Command's area of responsibility.

—Potential worldwide production could be as much as 900 to 1100 metric tons. This production is three times present U.S. demand.


THE NARCOTRAFFICKING THREAT
• TRANSIT MODES MAY CHANGE AND COCAINE ENTERS U.S. VIA LAND, SEA AND AIR
• PORTIONS TRANSIT CENTRAL AMERICA AND MEXICO
• COCAINE EXITS COLOMBIA BY VARIETY OF AIR AND SEA ROUTES
• PROCESSED INTO COCAINE IN COLOMBIA AND PREPARED FOR SHIPMENT TO U.S. AND WORLDWIDE
• BASE FLOWN TO PROCESSING CENTERS IN COLOMBIA
• PRECURSOR CHEMICALS ARRIVE AT LABS THROUGHOUT REGION TO CONVERT PASTE TO BASE
• COCA LEAF GROWN ALMOST TOTALLY IN PERU'S UHV AND BOLIVIA'S CHAPARE
TO EUROPE

—60 percent of the world's coca leaf is grown in the Upper Huallaga Valley in Peru and 30 percent in the Chapare region of Bolivia.

—The leaf is made into paste and base using millions of gallons of precursor chemicals and flown from Peru and Bolivia into Colombia on hundreds of light fixed wing aircraft. The chemicals used in making cocaine scar the countryside and pollute the watershed of the Amazon basin.

—Once refined into cocaine hydrochloride (HCL) in Colombia, it is distributed on thousands of air and ship movements to the United States and countries all over the world. A kilo of cocaine has a street value of approximately $20,000 in New York City, three times that in Europe, and ten times that in Tokyo. A few months ago, a one billion dollar shipment of cocaine from Colombia was seized in St. Petersburg, Russia.

Given the virtually unlimited resources of the narcotrafficker, his organizations have established roots in every country in Central and South America. His method of operation is insidious. First, the narcotrafficker buys up land in remote areas of El Salvador, Belize, Guatemala, Honduras and Mexico. Soon crude airfields are constructed which are just long enough to land fixed wing aircraft. Then aircraft fly from Colombia to these airfields and the illegal drugs are then transhipped by another mode of transport to the United States. But it doesn't stop there. The narcotrafficker frequently pays off the local nationals assisting in the transshipment, not in dollars, but in cocaine, which is then sold to the youth of these countries. In my first year in command, I met with one head of state in the region, who said to me, "General, I need your help. Every day and night narcotraffickers violate my country's sovereignty and land aircraft in the northern part of my country. Payment to the people helping them is in cocaine. These local people sell the cocaine in the capital city. I now have a drug addiction problem; violence and crime are up; my judges are being corrupted; my police are being corrupted; we are in danger of losing our democracy and our sovereignty. I need your help." This plea was echoed by most of the sixteen heads of state I have met with during the past year in Central and South America.

They are concerned because the methods of operation of the criminal narcotraffickers destroy the ideals and values of a free democratic society. They attack the very institutions and structures which protect and guarantee emerging democracies. We see this situation in Colombia today. The Colombians are not merely fighting narcotrafficking—they are fighting for their national survival, and to varying degrees, the in-roads made by the narcotraffickers can be seen in all the other countries of Central and South America.

Compounding this threat is the serious economic and social deprivation existing in Latin America which is exacerbated by narcotrafficking. The cocaine industry has direct economic costs: it displaces legal industry; it sabotages economic policy; it has high social, ecological, and political costs; and most importantly, it corrupts the democratic institutions these nations have struggled so long to create. Debt, outdated economic structures, over-urbanization, inflation, and high unemployment threaten the stability of these governments, and the narcotraffickers exploit these conditions to benefit their multi-billion dollar business.

However, the nations of Latin America are recognizing the threat narcotraffickers present to their societies, their democracies, and their sovereignty. A regional will is emerging to attack this insidious threat. While several years ago many countries considered drugs a boon to their economies, today they now understand that narco dollars do not improve the welfare of their people and do not lead to long term prosperity. With this emerging regional will, consensus on a cooperative regional approach to the narcotrafficker threat is now developing in the Andean ridge. To illustrates this increasing regional will, allow me to provide a more detailed assessment of key countries in the theater.

Central America.—Nowhere have our efforts in peacetime engagement been more successful than in bringing the fighting in El Salvador to a peaceful conclusion after twelve years of civil war. It was most gratifying for me to be a part of the U.S. delegation to last December's formal peace ceremony in San Salvador. But the peace in El Salvador is fragile and it demands our continued close attention. The narcotrafficker is poised to take advantage of this fragility, and the May 1993 capture of five tons of cocaine illustrates this danger. That country has a contraband smuggling infrastructure used during the war which is being adapted by the narcotrafficers for their purposes. We must stay involved in El Salvador as it makes the difficult transition from war to peace.

Guatemala continues to be a major transshipment point for the Colombian cartels. Small aircraft use hundreds of private airstrips throughout the country and the lack of radar coverage makes Guatemala an ideal transshipment point. This was evidenced by the seizure of fifteen and a half tons of cocaine in each of the past three years there.

Honduras is a regional leader in Central America and is at the forefront of counterdrug efforts in the area. Like other CENTAM nations, Honduras is a transshipment site for the products of Colombian cartels to the United States.

The other CENTAM nations—Nicaragua, Belize and Costa Rica—are also transshipment points for South American cocaine destined for the United States. The importance of these nations as transiting countries will probably increase as traditional routes become more risky for the narcotrafficker. However, I am particularly encouraged by CENTAM regional efforts and the recently concluded drug summit held in Belize is a clear indicator of national will to find common solutions to common problems.

Panama.—Panama's current situation gives cause for optimism due to its efforts to secure a stable, economically viable democracy. In the long term there are clear opportunities for Panama to become a major center in the region for commerce, banking, medicine, and education. However, drug trafficking and associated money laundering are direct national threats. Counterdrug successes elsewhere, Panama's porous borders with Colombia and Costa Rica, and the shipping industry associated with the Panama Canal are major factors contributing to make Panama a transshipment center. I am encouraged by the progress of the government of Panama in countering this threat—twenty-five tons of cocaine were seized in 1992 compared to seven and a half tons in 1991. However, Panamanian law enforcement agencies require more training and equipment to address the problem adequately.

Andean Ridge.—The countries of the Andean Ridge remain plagued by severe economic problems, vicious insurgencies, and illegal drug production and trafficking. The democratic institutions of these countries are in jeopardy. There continues to be clear, substantiated evidence of the linkage between the drug traffickers and the insurgents, and this significantly increases the complexity of dealing with both.

Colombia has shown great political courage in dealing with both the drug trafficker and its predominant insurgency, the Fuerzas Armadas Revolucionarias Colombianas (FARC). Indeed, no nation in the region has shown more commitment in the counterdrug effort. Nor has any country paid a higher price. Colombia experiences one of the highest mortality rates in the world. Last year there were over 27,000 violent deaths and over four-hundred police officers were killed. But, in spite of this, Colombia remains committed. The government continues to pursue the drug lords relentlessly and, despite the fact that Pablo Escobar remains at large, every one of the lieutenants who escaped with him on July 22, 1992 has been captured, surrendered, or killed. While the Medellin cartel has essentially been dismantled, attention must now be turned to the Cali cartel which is more ingrained into local society and will, in all probability, be much more difficult to eliminate.

Peru's democracy remains in jeopardy, although I am encouraged by the progress that has been made this past, very difficult year. Peru's problems are staggering. The economy still suffers with per capita income continuing to decline, inflation continuing to rise, and an estimated 75 percent of the workforce unemployed or underemployed.

Peru is also dealing with the most vicious insurgency in the world. The Sendero Luminoso, whose tactics and terrorist acts are some of the most horrific ever seen, is an outrage to all civilized peoples of the world. On the plus side, the arrest of Sendero leader Abimael Guzman was significant and was disruptive to Sendero's strategy. The Congress and the world community should condemn the Sendero Luminoso and focus the spotlight of moral indignation on these vicious criminals and terrorists. Simultaneously, Peru is attempting to confront drug traffickers who are supported by Sendero Luminoso. As a result of the suspension of democracy by President Fujimori in April of 1992, we terminated military support and training efforts in Peru. This was the right thing to do; it sent the right signals about our commitment to democratic principles to the rest of the hemisphere. The progress made to restore democracy in Peru has allowed us to partially reengage militarily. Indeed, Peru is aggressively implementing its own counterdrug strategy in spite of the lack of U.S. military assistance.

Bolivia, despite being one of the least developed nations in the region, is making progress in stabilizing democracy and building its political institutions. At the same time, it is working hard to deal with coca cultivation and drug trafficking. Alternative development programs are beginning to show an impact and some estimates place the percentage of Bolivia's total income from coca at about 3–4 percent, down from the 8–9 percent of only four years ago.

Throughout the Andean Ridge nations, I am very encouraged by the spirit of regional cooperation that is developing. Primarily centered on collective efforts to confront the drug trafficker, this spirit of regional cooperation can be, in my view, very useful for the nations of the region to deal with their other problems and issues in the social and economic sphere. This evolving mutual trust and confidence has resulted in a significant reduction in tensions in several long-standing border disputes between these various nations. These positive enhancements have been the direct result of our continued engagement in the region. We need to stay engaged.

Southern Cone.—The remaining countries of South America comprise the area we refer to as the Southern Cone and have become spillover nations from the Andean Ridge drug fight. In this vast area we are most concerned with the spread of the drug traffickers' tentacles. As our counterdrug efforts have become more effective in the source countries, these peripheral nations have seen substantial increases in trafficking through their countries. More important, the Southern Cone nations have resources—economic, political, law enforcement, and military—to assist in regional solutions to threats such as narcotrafficking and poverty. We should encourage such interaction.

Venezuela's democracy weathered two coup attempts in 1992. Prior to the most recent coup attempt, we had seen a new vigor in Venezuela to participate in regional counterdrug efforts. Brazil and Chile have seen the greatest increases in drug transiting among Southern Cone nations, and there is a growing awareness in both countries that they must become more involved against the narcotrafficking threat. We need to support and encourage the nations of the region in their struggle against the narcotrafficker. SOUTHCOM's strategy does just that.

THE STRATEGY

Pending completion of the Presidential Review of International Counter Narcotics Policy, the current counterdrug strategy of the U.S. Southern Command is derived from the U.S. National Security Strategy and the National Military Strategy of January 1992. My vision for the region is: A community of free, stable and prosperous nations throughout the hemisphere, acting in concert with one another while respecting the dignity and rights of the individual and adhering to the principles of sovereignty and international law.

The framework for achieving this vision is not limited to the physical disruption of illegal drug trafficking but encompasses other areas. Our theater strategic objectives are:

—Strengthen democratic institutions
—Assist Host Nations in defeating narcotrafficking
—Assist Host Nations in eliminating threats to their security
—Support continued economic and social progress
—Ensure open and neutral Panama Canal
—Enhance military professionalism.

Among these for reaching our objectives, the strengthening of democratic institutions is first and foremost. All activities of the command, including our counterdrug efforts, focus on that objective. And, we consistently evaluate USSOUTHCOM programs or initiatives by their impact on that objective. If an undertaking doesn't meet that objective then it is reexamined, modified, postponed, or canceled. Clearly, mature, economically-viable democracies throughout the hemisphere are in our national interest. They provide for regional stability, encourage more cooperative relationships, provide greater access to markets and the corresponding economic stimulus for our own economy, and they offer greater opportunity for peaceful resolution of disputes. They also align with our own intrinsic values of peace, freedom, and respect for human dignity.

However, these objectives cannot be achieved by our military forces alone. Our strategy is centered around interagency operations. Many agencies of the U.S. government bring capabilities to the table and the Department of Defense is but one of many players who make up the team. And, most often, DOD will not be in the lead, but in support of a U.S. ambassador and his country plan.

To bring rigor to this interagency process, USSOUTHCOM has developed a campaign plan for peacetime engagement operations. Rather than a reactive strategy, this is a unique regional approach, driven by national guidance. It stresses the support role of military operations in an interagency environment and provides a vehicle to commit forces to support U.S. agencies and host nation law enforcement and military units engaged in the counterdrug fight.

The central focus of our counterdrug efforts, though, is increasing both the national will and the capability of the host nations to confront the drug traffickers. It is their sovereignty and their democracy being violated; their judges, police, military, and politicians being corrupted; their children being addicted; and their democracies being threatened. Therefore, it must be their fight—and it is. Clearly, a source or transit region strategy will only work if it is the host nations' fight, but we must remain engaged and provide the support to make them effective.

Under our current guidance, the Andean Ridge nations are the first priority of our efforts. The guidance further directs that we can provide substantial support to host nations in various areas which include reconnaissance, intelligence, detection and monitoring, training, logistics, medical, command and control, planning, and civic action. We provide this support to both host nation military forces and law enforcement agencies. The counterdrug fight within each country is ultimately a law enforcement problem, but there are important roles for host nation military forces to play in supporting counterdrug efforts. For violations of air sovereignty and in areas where the insurgents are linked with the drug traffickers, it is necessary for the host nation military to have the ability to control airspace and assist law enforcement agencies in the fight.

While providing the support directed by the national command authorities, USSOUTHCOM also has a unique role to play as a regional coordinator by bringing the operational level perspective to the effort. The drug trafficker does not recognize national boundaries and crosses borders with impunity, so any viable counterdrug effort must look at the process and the network regionally. This is necessary to focus our high technology support assets at the right place at the right time. And, we must be able to apply them theater-wide to the vast narco-network.

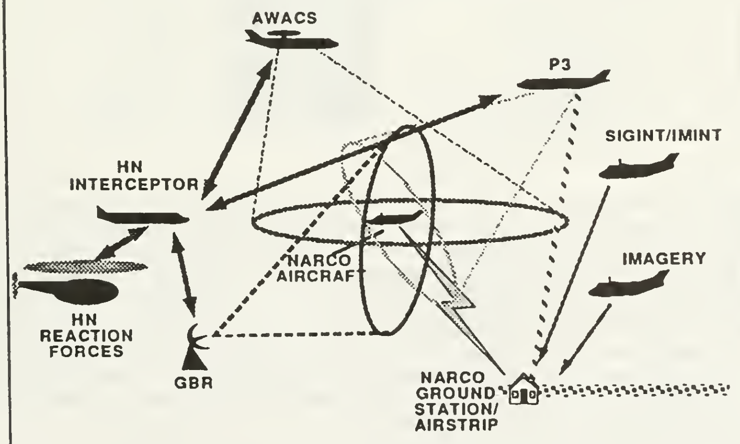
USSOUTHCOM's counterdrug strategy reduces the flow of drugs to the United States by promoting regional democracy, human rights, stability and security. To make this regional approach work, we need a support structure throughout the AOR that can rapidly and flexibly focus our capabilities on the narcotraffickers. This structure becomes the backbone of our ability to provide the right support and assistance to host nation forces at the right place and time. This support includes command and control, intelligence, operational support, training, detection and monitoring, and logistics assistance.

Timely, accurate intelligence is an area in which we have a significant advantage. We must bring our high technology capabilities to bear in supporting low technology host nation capabilities. The key is to focus these host nation capabilities at the right place at the right time in preparation for a specific operation. We want to fuse the information from all of our available reconnaissance systems to give the host nation forces the best available information on their targets. But, it must be timely and accurate. We have established counterdrug tactical analysis teams (TATs) in all of the key countries to do this type of analytical work. They have built a reputation for producing quality work. They represent a small investment, usually 2–4 service personnel, but ambassadors and country teams comment that without them, programs would be far less effective.

As with intelligence, detection and monitoring is an area which affords us the opportunity to bring significant capabilities to the fight. Since the end of fiscal year 1989, we have stepped up the time flown by DOD airborne platforms, such as the E–3 AWACS, and deployed temporary ground based mobile radars (GBRs) to key areas. I am very pleased with the Customs P–3 and Citations—they are truly the workhorses in this fight. We are well into fielding the Caribbean Basin Radar Network (CBRN). Tied into both the Southern Region Operations Center (SROC) in Panama and JTF4 in Key West, CBRN will be an essential piece of our surveillance capability for drug trafficking aircraft transiting to and from the United States. U.S. detection and monitoring support has been instrumental in increasing our understanding of the air patterns of the drug trafficking network. As this database expands, we will be able to get out in front of the narcotrafficker and cut off his means of distribution from the theater.

Despite the capabilities we bring to the fight, the host nation actually fights the battles. Our security assistance efforts provide the right equipment and focused training to improve their ability to fight the narcotrafficker. As I mentioned, there was little in the way of host nation counterdrug capability in 1989, but today I can report that a substantial capability exists among the Andean Ridge nations. Host nations have significantly increased numbers of police forces specially trained in counternarcotics techniques and have developed aviation units to support police forces. These mobile forces can now respond more effectively to our intelligence cueing. Colombia and Bolivia have developed counterdrug capabilities within their armed forces.

INTEGRATION OF COUNTERDRUG ASSETS

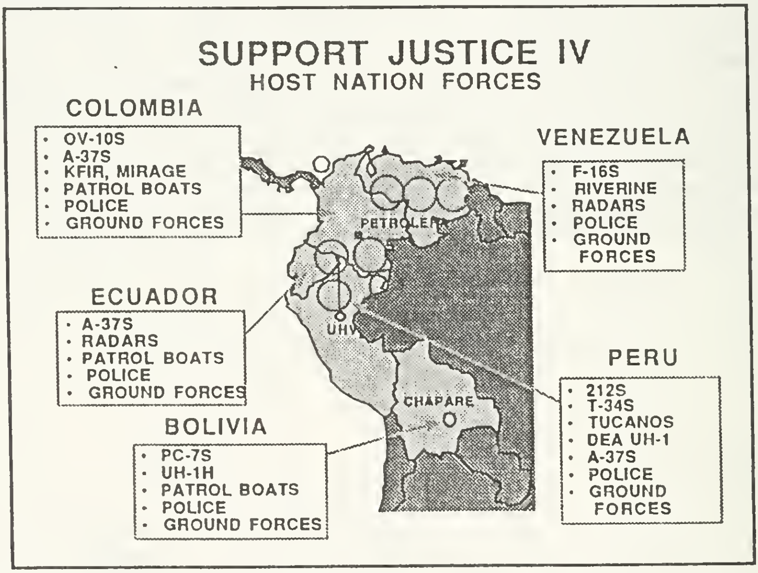


Further, all of these nations have added capability to their Air Force and riverine operations, to include Captain of the Port Programs. Our training efforts are key to this increase in their capabilities. Our International Military Education and Training (IMET) efforts also contribute to this increased capability. In IMET we have focused on training opportunities that enhance professionalism in the militaries of the region. Results of these efforts are reflected in greater commitment by the militaries of the region to the principles of civilian control through democratically elected governments and respect for human rights.

Within the command and control arena we have significantly improved our capabilities to provide timely and responsive support to the host nations. The Command and Management System (CMS), expanding from the Andean Ridge, has become a primary means of transmitting real-time counternarcotics information between nodes in Washington, SOUTHCOM, the embassies, and forward operating bases. It provides us secure voice communications, extensive data capability, and high quality imagery. CMS has made a significant contribution to achieving agility in this fight.

REGIONAL OPERATIONS

How well a regional approach would work was tested through a progressive series of surge operations. Termed Support Justice, these operations began in the summer of 1991. We are now in the midst of Support Justice IV, a multi-national effort involving the countries of Colombia, Venezuela, Peru, Ecuador and Bolivia. This effort is synchronizing air, land, and riverine efforts, with interagency participation, to inflict maximum damage on the narcotrafficking infrastructure. We are establishing the conditions to sustain the fight operationally and transition into steady state regional operations.



USSOUTHCOM support to this transition into steady state regional operations includes the deployment of ground-based USAF radars (both active and Air National Guard), focused E-3 and intelligence sorties, and 2–3 man connectivity and planning teams located throughout the operations area. Other agencies, such as U.S. Customs, the intelligence agencies, and DEA, have also committed resources which are being integrated with DOD assets and host nation capabilities. Since Support Justice IV began in September of 1992, host nations have requested extensions of the operation and a maturing of host nation capabilities. Host nation response forces are becoming more agile and more responsive to the intelligence and detection and monitoring cueing that our support assets provide. End-games are improving. But the lack of some key capabilities, most significantly night interception and tracker aircraft, have limited end-game successes.

Support Justice support operations are setting the conditions for long-term regional success in the Andean Ridge. There has been progress. Two years ago, no aircraft returning to Colombia from either Peru, the Caribbean or the Pacific were forced down. During Support Justice IV over 40 such aircraft have been seized or captured. Not only have 43,000 kilos of cocaine, with a street value of 860 million dollars, been seized, but more importantly, over 1900 narcotraffickers have been arrested. Other indications of progress include: Colombia has conducted combined operations along its borders with Ecuador and Venezuela; Ecuador and Peru now trade liaison officers in the drug fight and have reduced forces along their borders for the first time in 50 years; there is unprecedented cooperation in the region between police and the military; four-thousand Peruvian troops are now assigned to the Upper Huallaga Valley; human rights training is being taught in Peruvian military schools; Bolivians are working jointly with Brazilians; and the Argentines have expressed interest in a regional role. While all this cooperation is embryonic, it is in our interest to encourage the development of mutual trust and confidence in the Andean countries and promote these first attempts at confidence building measures. To do so promotes regional solutions to a regional threat and also strengthens democratic institutions.

In the transit countries of Central America, we also began regional support operations this past year. Operation Support Sovereignty, a Honduran initiative, was an important first step. We provided supporting assets in accordance with national direction, but it was a host nation operation. It highlighted transiting routes, provided other intelligence information, and set the stage for future expanded regional efforts. Most importantly, Support Sovereignty is in direct support of DEA's Operation Cadence or Central America regional strategy. We now have the connectivity to support Operation Cadence once it expands to other nations. Operation Cadence now has a 24 hour reaction capability, the first such capability in the AOR. Recently, a drug summit initiated by the Central American presidents, was held in Belize. At the summit, the Central American presidents expressed their endorsement of a regional counterdrug initiative as part of a collective security strategy. This summit is clearly a demonstration of growing national will by the democracies in Central America and we need to encourage and support their initiative.

ASSESSMENT

It has been nearly four years since the U.S. Military was directed to get involved in the drug fight; I have been the Commander of the U.S. Southern Command for almost three of those years. In that time, I have seen our efforts expand and witnessed the results of those efforts. Now is the time to fine tune our counterdrug strategy based on lessons learned from the past. Our strategy must have clear cut goals and objectives and not be dominated by one agency or department. U.S. agencies involved must complement each other, and to be successful, the strategy requires a long-term commitment to both supply and demand reduction, at the source, in the transit nations, and at home.

Clearly demand reduction in the United States must be our top priority and the allocation of resources should confirm the importance of the demand-reduction strategy. But supply reduction efforts which take advantage of increased national will and capability of the host nations are also crucial to the counterdrug fight. I have met with the heads of state of these nations many times and I am convinced of their dedication and determination. They are committed to the counterdrug effort. In each country there has been a significant increase in capability—forces committed to the effort, how they are equipped, and how they've been trained. We want the nations to reach the level where they can sustain the counterdrug effort on their own, and they are well on their way. It is in our interest at this point to stay engaged and I appreciate your support of our efforts in the region.

As previously mentioned, the effectiveness of our engagement in Andean counterdrug efforts must be viewed from a broader perspective, from its contribution to strengthening democracies and enhancing regional stability. Our efforts have paid great dividends in this regard. The nations have come together to confront this threat and their cooperation has created a new spirit of mutual trust and confidence. For example, the tensions of a long-standing border dispute between Peru and Ecuador have eased because of their cooperative work in Support Justice. Indeed, the Peruvians have withdrawn from the border area and, as a result, are now more committed to the counterdrug efforts in the Upper Huallaga Valley. Venezuela and Colombia have similarly conducted joint operations. Peruvian, Ecuadoran, and Colombian liaison officers, who fly on our detection and monitoring platforms, cross each other's borders regularly and routinely view each other's orders of battle. This is unprecedented in the region and may be our finest achievement from the counterdrug fight. This regional approach lays the foundation for regional cooperation in a variety of other efforts—economic, social, and environmental. There are unique opportunities for these nations to find collective solutions to their individual problems, based on the success of their cooperative experiences in the counterdrug effort. Given the growing cooperation between these nations, there is reason to believe that regional organizations, like the OAS, can take on greater, more substantive, roles for growth and stability in the region.

PROGRAMS AND RESOURCES

There are several programs which are essential to execute my strategy in the AOR and for which I seek your continued strong support.

Intelligence is the most crucial capability for executing my priority efforts. Especially in the counterdrug fight, intelligence plays an absolutely critical role in setting the conditions for success by host nation forces. Within that arena, the U.S. Air Force C–130-based intelligence platforms should be sustained at the current level. They provide unique capabilities particularly suited to the USSOUTHCOM environment. Also, the Airborne Reconnaissance Low (ARL) program will provide, for the first time, a combined imagery and SIGINT gathering capability. It is a capability tailored for USSOUTHCOM counterdrug efforts and will be under control of the Command, affording us a highly responsive capability. Its imagery products are releasable to the host nation, and this will provide a significant advantage in targeting the drug trafficking infrastructure.

Rapid and timely dissemination of the collected intelligence is also a critical requirement and the fielding of the Command and Management System (CMS) is providing us the primary means of transmitting real-time counterdrug information. Providing secure voice, data, and imagery capabilities to a wide variety of users in the AOR and in CONUS, the CMS has proven to be an exceptional capability.

These programs are all low-dollar investment programs which are ideally suited to peacetime engagement operations.

The nations of the region operate in a low-technology environment—their needs are not for high-tech hardware. Much of our excess defense articles could be used productively in SOUTHCOM's theater of operations.

I believe my needs and requirements should not be looked at in isolation. SOUTHCOM involvement in counterdrug efforts of source countries is, of course, limited to a support role. The 1992 National Security Strategy recognizes the Andean Ridge Region continues to be the primary source of cocaine consumed in the U.S. Narcotraffickers do not respect the borders of sovereign nations, therefore, SOUTHCOM is assisting in the coordination of regional plans and a transition to continuous (Steady State) operations. Steady State operations are part of a total national and international multiagency fight. These operations must be viewed in the context of their contribution to strengthening democracies, enhancing regional stability and assisting host nations in defeating the narcotrafficker. The means to this end are State, Justice, Treasury, Transportation and Defense Department programs, such as eradication, interdiction, alternative development, economic and social programs, military to military exchanges, nation building and security assistance like FMF, FMS and IMET. They include INM, DEA, Border Patrol, Customs and Coast Guard programs. These are the tools in the tool box and we cannot build the desired end state without all of these tools.

The results of U.S. engagement include stronger democracies and institutions as evidenced by recent events in Guatemala, El Salvador, Venezuela, Peru, Brazil, and Paraguay. Despite problems, militaries and dictators did not take over. Civilian control is being reinforced and respect for human rights is improving. Host Nation will and capability to cooperate regionally are increasing; regional economic cooperation is emerging and insurgencies are losing; and, border disputes are not as destabilizing. These are the opportunities of moderate steady engagement.

CONCLUSION

Mr. Chairman, let me conclude by saying that Central and South America is an area vital to the security of the United States. It is a region in conflict as well as transition. It is our southern flank with whom we share a common border and common values. We also share an insidious threat, narcotrafficking, which is killing tens of thousands of Americans—North, Central, and South. But, there is great optimism in the southern part of this hemisphere. Insurgencies in Central America will soon be eliminated. There is expanding regional cooperation and national will to fight the drug traffickers. Respect for human rights continues to improve. There is growing consensus on civilian control of the militaries. The United States' continued encouragement of the progress made in Central and South America is crucial for our own security. It is in our interest to maintain the constancy of that commitment. If we do, democratic institutions will be strengthened and true mutual trust and confidence will develop between all nations. And, if we do, peace, freedom and prosperity will be possible for the entire Western Hemisphere. And in so doing, we will disrupt the narcotrafficker who is causing tens of thousands of casualties in our country and requiring the expenditure of billions of dollars for health care, rehabilitation, education, and law enforcement. While we must do more on reducing the demand for drugs in our country—and we are—we also need to assist our allies in Central and South America in attacking these criminals at the source. And to do so will require, as I said at the beginning of this statement, one team focused on one fight. And this committee and the Congress are essential members of the team.

In closing, Mr. Chairman, I appreciate the opportunity to appear before you today. On behalf of all of the men and women under my command, thank you for the support this subcommittee has consistently provided our Armed Forces and the United States Southern Command.

One team—one fight!

BIOGRAPHICAL SKETCH

General George A. Joulwan (Jahl'win) became Commander in Chief of the U.S. Southern Command on Nov. 21, 1990. As such, he is responsible for all U.S. military activities in Latin America (except Mexico and the Caribbean) and for implementing U.S. national security policy and strategy in the region.

General Joulwan was born in Pottsville, Pa., on Nov. 16, 1939. He graduated from the U.S. Military Academy at West Point in 1961 and was commissioned a second lieutenant in the Infantry. He received a Master of Arts degree in political science from Loyola University in Chicago. General Joulwan's military education includes the Infantry Officer Basic Course, the Armor Officer Advanced Course, the Command and General Staff College and the Army War College. He was an ROTC instructor at Loyola University, a tactical officer in the Department of Tactics at the U.S. Military Academy, and director of Political and Economical Studies at the Army War College.

He has held a variety of command and staff positions during four tours in Europe, two combat tours in Vietnam and several tours in Washington, D.C.

During his fourteen years in Germany, he served as a platoon leader, company commander, battalion commander, brigade commander, division chief of staff, and the Deputy Chief of Staff, Operations for U.S. Army, Europe. He also served in a joint assignment as special assistant to the Supreme Allied Commander, Europe at Supreme Headquarters, Allied Powers, Europe, and commanded the 3d Armored Division from March 1988 to August 1989.

In Vietnam, he served as a company commander and the S–3 in the 1st Battalion, 26th Infantry, 1st Infantry Division, and as a brigade S–3 and deputy G–3 of the 101st Airborne Division (Air Assault).

In Washington, D.C., after an assignment as assistant executive officer to the Vice Chief of Staff, U.S. Army, he served in joint assignments as special assistant to the President of the United States in the Office of the President, and executive to the Chairman of the Joint Chiefs of Staff. He was next assigned as Director, Force Requirements (Combat Support Systems) in the Office of the Deputy Chief of Staff for Operations and Plans, Department of the Army.

From August 1989 to November 1990, General Joulwan was commanding general of V Corps under U.S. Army Europe and Seventh Army. He was promoted to his present rank of general on Nov. 9, 1990.

Military awards and decorations which General Joulwan has received include the Defense Distinguished Service Medal, Distinguished Service Medal, Silver Star (with oak leaf cluster), Legion of Merit (with oak leaf cluster), Bronze Star Medal (with V device and two oak leaf clusters), several Air Medals, Meritorious Service Medal (with three oak leaf clusters), Joint Service Commendation Medal, Army Commendation Medal (with oak leaf cluster), Combat Infantryman Badge, Parachutist Badge, Ranger Tab and Expert Infantry Badge. He holds the Presidential Service Badge, the Joint Chiefs of Staff Identification Badge and the Army Staff Identification Badge.

General Joulwan is married to the former Karen E. Jones. They have three daughters: Jennifer, Christen and Jessica.

SIZE OF NARCO THREAT

Senator INOUYE. General Joulwan, on behalf of the committee I thank you very much for that extraordinary presentation. Before I turn over the Chair to Senator DeConcini, I just have one question to ask that may give me a better picture of what we are dealing with.

One of your charts indicated that in the past year you have had 2,000 arrests and thousands upon thousands of kilograms of drugs of one sort or another. How large is the cartel army? What are we dealing with?

You have indicated there are more than 100 aircraft.

General JOULWAN. Yes, sir.

Senator INOUYE. So that means you have got an air force of a couple of hundred pilots and repairmen and mechanics, et cetera. How large is this organization we are dealing with?

General JOULWAN. We are trying to piece all that together. It is huge. But what they are doing, which is of great concern, is that they are enlisting the help of insurgent groups. In Peru they swell their numbers by using the Sendero Luminoso. The Sendero Luminoso, or the Shining Path, is a vicious insurgency. It is Maoist based. And they are paid by the narco trafficker to protect what I showed you in the film, to protect these growing areas and when the flights come in.

So they are criminals. It is not a military organization, it is a criminal network, and they buy protection and they buy planes. For example, in the Petrolera area of Colombia, I call it the Federal Express. It is planes on call that will come and haul for a price so many flights of cocaine. And so they would contract out some of this. And the same thing with the growing areas.

It is not a military organization, it is a criminal organization. They operate on profit and risk. They want high profits at low risk. What we are trying to do is raise the risk level. But there are some very detailed listings of the pilots by name, where their companies are located, et cetera, et cetera. And DEA in particular has done an excellent job in that chronology.

DRUG SMUGGLING VIA AIR

Senator INOUYE. Do these aircraft belong to private companies or are they part of the so-called air force of the cartel?

General JOULWAN. Primarily private narco companies. They operate in clandestine regions of Colombia. Some of them operate right out of Cali. Some of them—we have found corrupted air traffic controllers, particularly in Cali. But for the most part they operate in the clandestine and some of the jungle areas in the eastern side in what they call the Ilano of Colombia.

Senator INOUYE. So from your statement, you are responding to Senator Stevens that the narcos do subsidize terrorist groups.

NARCO-TERRORIST LINKS

General JOULWAN. In terms of Sendero Luminoso, absolutely. And we are having more and more evidence of them also involved with the FARC, which is an insurgent group in Colombia.

Senator INOUYE. Any other group?

General JOULWAN. I would say those are the two primary groups. We were concerned about the URNG in Guatemala, but I am not ready to say that yet. We are watching that very closely.

Senator INOUYE. Are they spread out to the Middle East or to Europe?

General JOULWAN. I do not know that, Senator. I am not sure. But I do know in my area, that they provide large sums of money to the Sendero Luminoso in particular.

DRUG SMUGGLING VIA SEA

Senator INOUYE. Does the cartel also have under its command ships?

General JOULWAN. They have a great number of maritime ships. Again, I will not say under their command. They try to buy their way with containers, certain containers on certain ships. But we are getting a better data base, particularly DEA, on not only plane registration and numbers, but also ship registration and numbers. So we are getting a better feel when we see a ship that it is a very high suspect ship, and there are more boardings and searches of those ships, more so than in the past.

Senator INOUYE. However, the airlift aircraft and the sealift ships, the owners of such entities are well aware of the cargo they are carrying.

General JOULWAN. I would say yes; absolutely.

Senator INOUYE. Thank you.

Senator DeConcini.

Senator DECONCINI. Mr. Chairman, thank you very much.

General Joulwan, time is moving along and I wonder if you can just give us a quick assessment of what assets that you currently are devoting to the counterdrug activities in SOUTHCOM. What do you have there and how many missions are flown with that aircraft?

General JOULWAN. The primary aircraft that we use are the AWACS and the E–3 and the P–3. And of the two, the workhorse for our theater is the Customs P–3. We have approximately 12 sorties of the E–3 and 24 sorties of the Customs P–3 every month.

SOUTHCOM ASSETS COMMITTED

Senator DECONCINI. And how many missions do you believe you should have, if you had all the assets that you could use?

General JOULWAN. With what we know now, we would like to keep constant coverage. I would like to have at least a P–3 and an E–3 up every day.

Senator DECONCINI. That would be roughly 30 missions.

General JOULWAN. Thirty sorties. To try to put the pressure on at the source before it gets in the containers, before it gets made in the fencepost, before it gets put in the coffee or fruit or anything else.

Senator DECONCINI. Could you handle that kind of equipment at SOUTHCOM?

General JOULWAN. Yes, sir.

Senator DECONCINI. Under the present circumstances.

General JOULWAN. Yes.

EMPLOYMENT OF AWACS

Senator DECONCINI. Do you have any E–3 AWACS as assets which are available to SOUTHCOM on a permanent basis?

General JOULWAN. We have one, sir.

Senator DECONCINI. One. And have you ever been denied the request of an E–3?

General JOULWAN. For the past year we have had one dedicated AWACS. We also at times are able to get an AWACS that LANTCOM has that works their area of responsibility. I know of no time that we have been denied that one aircraft, but that is 12 sorties.

Senator DECONCINI. That is all they can do with that one aircraft.

General JOULWAN. Yes, sir.

Senator DECONCINI. And do you have sufficient crews available for the E–3?

General JOULWAN. We have, I believe—I do not know if they upped it to two crews. I think it is one crew.

Senator DECONCINI. And how about the P–3's. Do you see any benefit in the P–3's, the slicks, and do you see an advantage to using this asset and crews to carry out?

IMPORTANCE OF U.S. CUSTOMS P–3

General JOULWAN. The P–3, let me tell you why the P–3 is so important. The P–3 helps build this mutual trust and confidence. We can put a host nation observer and controller on board. And if we are going into their sovereign airspace and it is their ground forces or air forces that are involved, to me it makes good sense to have the agility to pass information quickly. And the host nation controller on board the P–3 is allowed to do that. And that is a great plus when building the mutual trust and confidence, plus in improving the success of an end game.

Senator DECONCINI. What is the difference between the P–3 versus the E–3 as far as the performance and what you get out of it?

General JOULWAN. Well, what I use the E–3 for is wide area surveillance. And the thing about it is it can cue a lot of assets toward—to where, a suspected track. It is very good at doing sorting. In the daytime you may have several hundred tracks. It sorts it out by range, by altitude, by speed, and then it can target the P–3 onto it, which has the host nation controller on board, which can then cue host nation assets for an end game.

Senator DECONCINI. And the difference in cost per hour, do you know? About double or something like that.

General JOULWAN. I think it is about double, but I would have to get that for you, sir.

Senator DECONCINI. General, the Customs Service continues to cover the costs of the crews and the travel and the per diem expenses for the P–3's. Do you see any distinction between the mission being flown by DOD versus the Customs? And if not, can you tell me if you think it would be appropriate for the Defense Department to cover at least the operations and maintenance of the P–3's?

General JOULWAN. Yes, I think it would be appropriate.

Senator DECONCINI. You have made such a request.

General JOULWAN. No; we have not; we have expressed conceptual support of the idea. We have not made a formal request.

SIZE OF CD BUDGET

Senator DECONCINI. What is your current budget and what is proposed for 1994 for your drug/counternarcotics?

General JOULWAN. It is roughly about $200 million. That includes the procurement, as well as the operating budget from the counterdrug side.

Senator DECONCINI. Just for SOUTHCOM.

General JOULWAN. For SOUTHCOM.

Senator DECONCINI. For SOUTHCOM. And is that what your request is for 1994?

General JOULWAN. That is what our request is for 1994. What we hope to do is go to steady state in these operations, but we are trying to——

Senator DECONCINI. If you get your request for 1994, roughly $200 million, will you be able to carry out the mission that you think is necessary here?

General JOULWAN. We think in the op tempo or the operating costs; yes. We are very much interested in trying to get capability for the host nation to be able to continue to development their capability and will for successful end games.

RAMP EXPANSION AT HOWARD AFB

Senator DECONCINI. Included in that request, is there money there for ramp space expansion?

General JOULWAN. No; there is not.

Senator DECONCINI. And where do you believe the United States could be doing more in the interdiction in-country?

General JOULWAN. In creating host nation capability—I might add that a demonstration of host nation will to me is that the Colombians want to purchase radars for their own country with their own money. That is a great step forward. They also want to purchase Black Hawk helicopters to develop a night capability, which they do not have. And I think that is a great step forward. We ought to be willing to help them in that effort where they have demonstrated the will.

I think in the riverine side, trying to get riverine craft to take away where the precursor chemicals come in, to take away that option for the narco trafficker, to continue to put pressure on the cartels. We can also help in the Coast Guard in their coastal waters and we are trying to get some excess Defense articles in there as well.

RISK OF CORRUPTION

Senator DECONCINI. Just how risky is that, in your judgment, General Joulwan, on the fact of misuse of those funds: corruption or they are being tipped off? What is your observation?

General JOULWAN. That is always a concern. But I think it is worth the risk. I think what we need to do is continue to work with them. We are finding that when corruption is found, that senior military and police and civilian folks that are corrupted are being removed, and we are starting to see some folks with integrity, leaders with integrity, come into the system.

I think we have got to keep working the problem and that means we have got to stay engaged with them. Are there risks to that? Yes, sir; there are risks to that. But I really think it is important that we stay engaged.

Senator INOUYE. Would you just yield?

HOST NATION RIDERS ON P–3'S

Senator DECONCINI. Certainly.

Senator INOUYE. Just for clarification, you have used the phrase "work with them." In the manning of, say, the P–3, on the crews, do you have host country personnel or is it all American? Or the AWACS and such.

General JOULWAN. The host nation puts controllers on board. They are on board the P–3 to take the information and pass it to ground forces on the ground.

Senator INOUYE. I see.

General JOULWAN. And, yes; they are on. And the beauty about the P–3 is that it is a law enforcement aircraft and it can be passed directly to personnel on the ground. And that is why it is so valuable in this particular fight.

Senator INOUYE. So it is not a situation where we gather intelligence and we pass it on, but they are there themselves.

General JOULWAN. And the great support you have given the last time we met, sir, on the airborne reccelow aircraft, is now coming into the theater. And that allows the secret noforn to come off some intelligence, and we are able to share that with the host nation quickly.

It is that agility that we need to develop for this particular fight. You said in your opening statement that we are faced with new challenges around the world. One of the challenges we face, in my opinion, is how do we share intelligence in a real-time way with nations who are in a state of war when we are not at war, and how can we pass that information to them so that they—but the outcome of their fight is directly related to our security. How can we pass that to them in a way that can have the best result?

And we are having platforms now come like airborne reccelow, like the Customs P–3, that can do that. That is what has me excited. We have to build mutual trust and confidence, like we did in NATO, like we have done other places in the world where we have a common threat.

We have a common threat that is causing casualties in our country and we have got to develop this regional effort by all the nations of the region. And we have a similar operation or attempt going on in Central America, to try to make this work. Without their cooperation, we will not. But part of that is sharing intelligence. It is very important.

SOUTHCOM CASUALTIES

Senator INOUYE. Speaking of casualties, obviously we all agree that there are millions of casualties in the United States as a result of cartel activities, but how many casualties have you incurred in your command?

General JOULWAN. Of my forces?

Senator INOUYE. Yes.

General JOULWAN. I have had—directly related to the narco threat, of military forces there have been some aircraft, and we are not sure how they were in the DEA side, but of the military side I can think of none. We had a C–130 incident over Peru, but that was by Peruvians who had mistaken the C–130. But I know of none from the narco side, and I hope we do not have any.

Senator INOUYE. Senator DeConcini?

REQUIREMENT FOR CUSTOMS P–3'S

Senator DECONCINI. Thank you, Mr. Chairman.

General, you have one P–3 down there now? Customs has dedicated one P–3?

General JOULWAN. It varies between one and two.

Senator DECONCINI. How many would you need to have coverage?

General JOULWAN. I would like to see three P–3's down there.

Senator DECONCINI. What does that amount to? Having two down there permanently?

General JOULWAN. Two down there permanently.

Senator DECONCINI. With rotation?

General JOULWAN. Yes.

Senator DECONCINI. And that is not in your requisition for 1994, is it?

General JOULWAN. No; it is not, Senator.

Senator DECONCINI. There is nothing in Customs' request for another P–3 and I wondered if there was anything in DOD?

General JOULWAN. There is not.

HOST NATION RIDERS ON P–3'S

Senator DECONCINI. In response to the chairman's question there about these host country controllers being on board, the advantage of the Customs P–3 is that it is not a military plane.

General JOULWAN. Exactly.

Senator DECONCINI. Therefore it can fly a mission different than an Air Force airplane would fly, and you can have a host controller on the P–3 law enforcement plane where you might have a problem in the military. Is that correct?

General JOULWAN. That is correct. We are working very hard to get that same capability on board the AWAC's. It is being worked right now. But right now the P–3, as a law enforcement plane, gives us great flexibility in the region.

Senator DECONCINI. If Customs is not asking for another P–3, the only place to get it would be out of Defense, if it is included your request.

General JOULWAN. Well, I have asked to try to get it. We think for a steady state operation, which is what we really want to go to in the Support Justice in the Andean Ridge, we think——

Senator DECONCINI. What you need is another P–3 that is not a military P–3 but a law enforcement P–3.

General JOULWAN. Exactly; yes, sir.

Senator DECONCINI. Customs or whoever.

General JOULWAN. Yes.

SECURITY ASSISTANCE

Senator DECONCINI. Are there any countries where the U.S. support assistance does not appear to be working that you are working now? Where is breakdown? Is there some?

General JOULWAN. I cannot think of any. I have to make sure. We have very few funds, particularly on the foreign military sales side, or FMF, and that has gone down—it is going down to below $30 million for the whole region for 19 countries in 1994, and it was about $50 million in 1993.

So, no, I think it is working. I think it is working very well. We are just very limited in where we can put those resources.

Senator DECONCINI. Now, the relationship you have down there involves, obviously, the military, the DEA, the Customs Service, the CIA. Anybody else?

General JOULWAN. Coast Guard.

Senator DECONCINI. Coast Guard. What is the general relationship there, and could it be improved?

MARKET FORCES ON COST OF COCAINE

General JOULWAN. Well, I think at the regional operational level we have a very good working relationship. I think everyone understands that you have got to cooperate and you have got to take what assets you do have, and how can you focus them in a way to get the best synergy out of those assets.

Senator DECONCINI. Do you think it is working as well as it can?

General JOULWAN. I think it is working. Of course, it could be improved. We have provided, on the DOD side, this command management system which is a communications network that extends from Paraguay all the way to Mexico. It again gives us agility and it is the spinal network that allows us to pass information. And I would urge that that be continued because we can pass imagery across that very quickly, right from Washington straight down to La Paz in about less than a minute off a satellite. And that is high-technology intel that is extremely important and what we do is most of that is for DEA folks on the ground.

The request for information in the upper Huallaga, the Chapare, and in Columbia primarily come from law enforcement, DEA folks. One-half of the planning group in Bolivia comes from my headquarters that works under DEA. So, there is a good working relationship. It can be better, but we are working to make that one team, one fight.

SHOULD INTERDICTION EFFORTS BE HALTED?

Senator DECONCINI. In your view, what would the effects be if the U.S. drug interdiction support and assistance were curtailed or eliminated?

General JOULWAN. I am sorry, sir?

Senator DECONCINI. If this program was not funded, and it was eliminated or curtailed substantially, what would the effect be in your judgment?

General JOULWAN. I think it would have a detrimental effect on what we are trying to do. I think the nations of the region with which we are trying to build this mutual trust and confidence, that are taking a great deal of the casualties in this fight, I think would pull back somewhat. I think we would lose some of the credibility that we have with them.

Senator DECONCINI. And we would have more drugs coming into the country?

General JOULWAN. I think you would have many more drugs coming into the United States.

Senator DECONCINI. If it is not classified, what is the estimated amount of drugs going to Europe out of this area, and is it increasing?

General JOULWAN. It is increasing and the numbers vary, but it is increasing. I would say it is over 100 metric tons right now. It is very hard to get your hands around it.

Senator DECONCINI. Is it increasing because there is a lack of interdiction on the part of the Europeans generally?

General JOULWAN. I really think that the awareness that we have in this country is not yet to that level in Europe. I think that the price of a kilo of cocaine is three times what it is in New York. In Europe, it is three times that.

Senator DECONCINI. A more attractive market?

General JOULWAN. Ten times in Asia, in Japan, of what a kilo costs, so it is an international problem. I was very pleased to see 2 weeks ago Boutros Boutros-Ghali in the United Nations in a speech said that this is an international threat, that we have got to recognize it as an international problem. And I think that is something that I would urge, that we treat it in the international fora.

PRD–18

Senator DECONCINI. I only have two more questions, Mr. Chairman. I understand the President's review document, known as PRD–18, has been formulated by the National Security Council which identifies the various roles.

I understand that in early drafts that DOD now has the air interdiction and assistance role in source countries and in the so-called transit areas, but that it would be changed to only support source country activities.

If this occurs, what in your view would be the effects and who would be the logical agency to pick up the slack?

General JOULWAN. They are still in a very—still in that bottom-up review on the counterdrug effort, and I am not sure about what the final or the current draft says. But I would rather give some clarity on that when I see the latest draft. Customs, of course, plays a key role and are doing superb work in the region. But, again, it has to be a partnership. But I have to see the latest draft, sir, before I comment on it.

HOST NATION CAPABILITY TO GO IT ALONE

Senator DECONCINI. Can we expect any of these source countries any time soon to take over the responsibility without U.S. support or financial assistance?

General JOULWAN. In Columbia I think they are closer than anywhere else. They want to be in charge. What we are trying to do is to try to give them the assets and the training to do that. President Gaviria has made it very clear that it is a high priority.

HOST NATION RESOLVE

Who would have ever thought that this powerful Medellin cartel that was invincible a few years ago is now, for the most part, in panic and has been destroyed? Escobar is still loose, yes, but every lieutenant, every one that escaped with him has either been killed, captured, or surrendered. There has been a great pressure put on and it has fractured the Medellin cartel. Cali is the next one. And that is a direct result of the host nation will of the Columbians, and it is not without risk. They are taking car bombs. They are taking casualties, but they are committed to doing it. And so I think the Columbians are the closest to doing that.

The Bolivians are trying to Bolivianize the attempt in Bolivia to take over the effort down there as well.

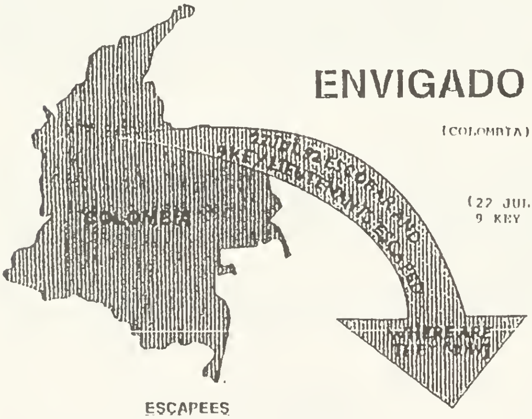
Senator DECONCINI. You have that information that you showed me of all those Escobar lieutenants, so to speak, that have been arrested or murdered or no longer operational. Could it be supplied to the committee?

General JOULWAN. Yes, sir.

[The information follows:]

ENVIGADO ESCAPE

(COLOMBIA)



(22 JUL 92 ESCOBAR AND
9 KEY LIEUTENANTS ESCAPED)

(WHERE ARE THEY NOW?)

ESCAPEES	STATUS	DATE
PABLO ESCOBAR	AT LARGE	
-JORGE AVENDANO ARANGO (AKA TOTO)	SURRENDERED	15 SEP 92
-ROBERTO ESCABAR GAVIRIA	SURRENDERED	8 OCT 92
-JOHN JAIRO VASQUEZ (AKA POPEYE)	SURRENDERED	OCT 92
-OTONIEL GONZALES FRANCO (AKA OTTO)	SURRENDERED	8 OCT 92
-GUSTAVO GONZALES FLORES (AKA TAVO)	SURRENDERED	13 OCT 92
-LUIS FERNANDO HENAO (AKA MISIL)	SURRENDERED	14 OCT 92
-LUIS CARLOS AGUILAR GALLELO (AKA EL MUGRE)	SURRENDERED	17 OCT 92
-BRANCEY MUNOZ MOSQUERA (AKA TYSON)	KILLED	27 OCT 92
-JOHN RIVERA ACOSTA (AKA EL PALOMO)	KILLED	26 NOV 92

SUMMARY OF SESSION

Senator DECONCINI. Mr. Chairman, I would like to thank the General for coming up and doing this. I particularly want to say, Mr. Chairman, that I think it has been the leadership of this committee, you and Senator Stevens as the ranking member and chairman, that have devoted the time and the resources here to the drug interdiction problem.

We would not have this. There is no place else that there would be any money if it was not for your leadership and willingness to concur with the past administration and, hopefully, this administration under the PRD–18 and their continued budget requests that there is a dedicated effort here that I think the military properly plays an important role in. As General Joulwan points out, the casualties are Americans directly, and it is in our national interest.

I thank you, Mr. Chairman, for the time and the staff also for putting these hearings together. I know they have got a lot to do in preparation for your markup and it is somewhat of an imposition, but I thank you, Mr. Chairman.

And thank you, General.

Senator INOUYE. Thank you very much. Is it your opinion that the budget, as submitted by the administration, is sufficient for you to carry out your mission?

General JOULWAN. Yes, sir.

Senator INOUYE. Well, we will do our best, sir, because of all the many problems we are confronted with in the United States, there is nothing that comes close to this one, because if we do not get a handle on this one then I think our Nation is in real trouble, if we are not already in trouble. So, your work is important to this committee, your work is important to the Congress and to the Nation. We would like to do whatever we can to provide you with the necessary resources and assets for you to carry out your mission, sir.

GENERAL JOULWAN'S CONCLUSIONS

General JOULWAN. Mr. Chairman, I thank you and Senator DeConcini and your committee for allowing me the opportunity to explain what we are trying to do in the southern region. As I said before, I am one part of a team. It is a good team, it is a hard working team, it is an interagency team that is trying to do the right thing for our Nation and for the nations of the region.

I am optimistic. And with your support and the support of this committee and the Congress, I think we can make a difference, particularly in this last decade of this century in the war on drugs, and I am optimistic about that. And I thank you and the committee for you support.

Senator INOUYE. The reason for this hearing, I think, should be apparent. As I indicated in my opening remarks during the executive session, in recent years we have been called upon to involve the Department in nonmilitary-type activities, heretofore not anticipated such as drug interdiction. There are those in the Congress and elsewhere who question the involvement of the Defense Department in nonmilitary-type activities, so we felt that a hearing of this sort was necessary to have in the record evidence and testimony that would justify the large expenditure for this purpose.

So, with that we thank you very much for the work you are doing, and we wish you God speed and hope to see you soon.

SUBCOMMITTEE RECESS

The subcommittee stands in recess, subject to the call of the Chair.

[Whereupon, at 4:29 p.m., Thursday, July 15, the subcommittee was recessed, to reconvene at 10 a.m., Tuesday, September 14.]

DEPARTMENT OF DEFENSE APPROPRIATIONS FOR FISCAL YEAR 1994

TUESDAY, SEPTEMBER 14, 1993

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 10:12 a.m., in room SD–192, Dirksen Senate Office Building, Hon. Daniel K. Inouye (chairman) presiding.

Present: Senators Inouye, Leahy, Bumpers, Lautenberg, Stevens, Cochran, Specter, Domenici, and Hatfield.

DEPARTMENT OF DEFENSE

OFFICE OF THE SECRETARY OF DEFENSE

STATEMENT OF HON. LES ASPIN, SECRETARY OF DEFENSE

OPENING STATEMENT OF SENATOR INOUYE

Senator INOUYE. Good morning, and welcome back, Mr. Secretary.

Needless to say, this is a very important hearing. The subcommittee concludes its review of the fiscal year 1994 budget for DOD at this meeting. Following this, we will have our markup sessions.

I regretfully must advise you that, as of this moment, we have tentatively set the markup session for September 21, and the full committee markup 2 days after that. We had hoped that we would be able to proceed a bit more expeditiously, but, as you know, we are still working on the authorization bill. So it becomes increasingly clear, sir, that we cannot avoid a continuing resolution. I regret that very much. But in the interim period, I hope we can work closely to refine this measure as well as we can.

The administration budget request, as you know, requested $250.7 billion for DOD. Of this amount, $242 billion is for programs and activities within the jurisdiction of this subcommittee. As such, the request was about $12 billion, or 5 percent in spending authority, below funding which this subcommittee provided in fiscal year 1993.

Now, under the terms of the budget agreement for fiscal year 1994, these amounts will have to be further reduced. In fact, the subcommittee's allocation of budget authority and outlays under the 1994 budget agreement and resolution is $240.6 billion in authority and $255.3 billion in outlays. So we face an even more formidable challenge in reaching this outlay ceiling; and sadly, to comply, we will have to cut $3.3 billion in outlay below the budget request.

In this budget proposal for defense spending, the administration has established stringent targets for future years. To be sure, the plan for the next 4 years would allocate $1 trillion for national defense. An enormous sum by any measure. Yet, if we look at it from the vantage point of those who must enforce and live with the reductions, we see it quite differently. From that perspective, we see an unprecedented $90 billion cut from previous plans.

We had hoped that the "Bottom-Up Review" would provide details on specific reductions to get to the overall budget levels which the Clinton administration has set for the next 4 years. The "Bottom-Up Review" did an appropriate job of outlining future military strategy and the programs which will be required to carry out this new strategy. But it did not offer guidance on how to pay for these programs.

So what we hope, Mr. Secretary, is that you can provide greater clarity to this vision for the future.

As it is, the committee cannot gain sufficient information from the "Bottom-Up Review" to answer the question: How can we afford force structure at proposed levels while investing in costly acquisition programs?

Today, we will ask you, Mr. Secretary, to respond to our concerns over the affordability of tactical air modernization, the C–17, ship and submarine construction programs, SDI, and the Army's top-priority acquisition, the Comanche helicopter.

Mr. Secretary, I think all of us agree that readiness is key to the strategy put forward in the "Bottom-Up Review." But, as you know, there are already danger signs on the readiness horizon. There are shortfalls in spare parts and backlogs are growing in depot maintenance. At a more fundamental level, the services are beginning to have trouble meeting their recruiting quality goals. We need to know how you will attract and keep quality personnel in our uniformed services.

The subcommittee has great concerns with the plan for the next 4 years. Like many on my subcommittee, I have visited with our sailors and soldiers, and it is apparent that previous cutbacks are bringing real pain to our fighting forces. I imagine you know that we are going to provide uniformed personnel with a pay raise, because of our concern for them and the hardships they face. I would like to hear your views on the quality of life of enlisted personnel and that of lower ranking officers.

Finally, Mr. Secretary, I must express my growing concern over what I term taxes on the defense budget. Yesterday, at the suggestion of the administration, the subcommittee agreed to give away $210 million in fiscal year 1994 outlays to the Foreign Operations Subcommittee for Russian assistance. Peacekeeping, Russian aid, defense conversion, and on and on, amount to taxes on the DOD budget which raise additional affordability questions about investment in the operations budget in the future years defense plan. I would be interested in learning your thoughts on this matter.

Mr. Secretary, I welcome you on behalf of the Senate Appropriations Committee and we look forward to your testimony today on the fiscal year 1994 budget and the future of the Defense Department. I realize, sir, that your time is limited. You have an important meeting with the President, so we will try to conclude this hearing by 12 noon.

I know you have a number of charts on the "Bottom-Up Review" which you would like to discuss with the committee and you may proceed as you wish, sir.

But before we do, may I call upon the vice chairman of the committee, Senator Stevens, my dear friend.

Senator STEVENS. Well, thank you very much, Mr. Chairman.

Mr. Secretary, we do welcome you here. Senator Inouye has spoken, I think, for all of us with regard to the problems of the foreign aid budget.

As we meet here, we still have forces stationed overseas. We have forces that are in Somalia, that are in Saudi Arabia, in the former Yugoslavia. The interesting thing is that none of the costs for those deployments are in your 1994 budget or in the 5-year plan. And we are going to welcome to see the total review of your "Bottom-Up Review" here this morning. But I want to echo what Senator Inouye has said. It will be very difficult for us to fund the defense authorization bill that still is on the floor with the limitations now placed upon this committee for outlays. And we have some changes that we will make, particularly in the pay area.

I do believe that we have to have, once again, a meeting to make sure our priorities meet with yours. You and General Powell, I think, have done just an admirable job in trying to keep us ready to meet the contingencies that we face abroad. But I am of the opinion now that, because of the difficulty that we face, paying more and more of these foreign aid costs out of defense, and making reductions that go even beyond what you had contemplated with the "Bottom-Up Review," that 1995 looks like a very, very bad year for defense unless we can find some way to change this total framework that you operate in.

We are happy that you, our friend, are where you are, because we have worked with you over the years and we know that you know the background as well as we do. But, from this Senator's point of view, our modernization programs are at great risk right now and I look forward to consulting with you, and I think the whole committee does, on how to resurrect those plans and carry them out. Because the modernization of our forces ought to be foremost in our minds today.

Thank you, Mr. Chairman.

Senator INOUYE. Thank you very much.

Mr. Secretary.

CONTEXT FOR THE "BOTTOM-UP REVIEW"

Secretary ASPIN. Thank you. I would like to thank both of you gentlemen for your opening comments, much of which I share; and we will be able to talk a little bit about that as the morning goes on.

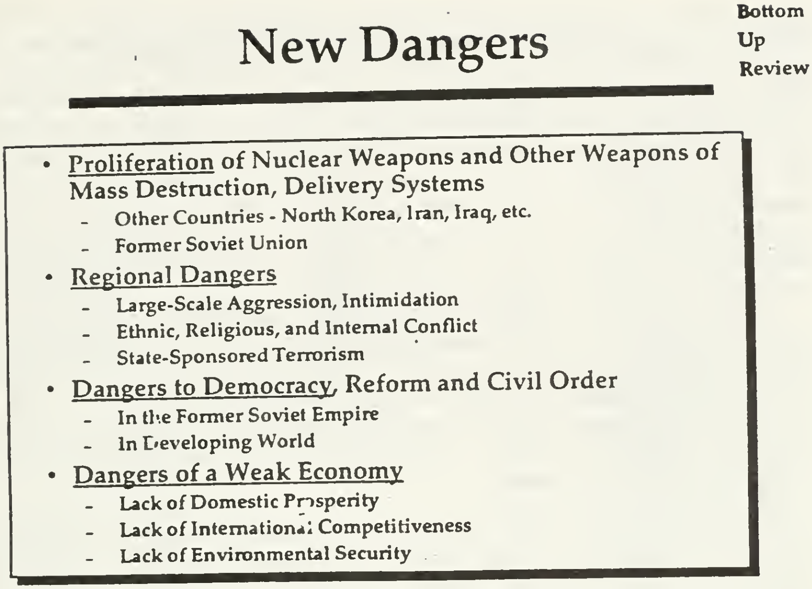
I was here, I think, in April when I did a presentation for the 1994 budget. What I would like to do now, though, is to go over a little bit of the "Bottom-Up Review," because, as you look at where we are going and help us with your thoughts about where you are going, that will affect some of the issues in the 1994 budget. So what I would like today, if I could, Mr. Chairman, is to take some time here and to run through at least a few of the highlights of the "Bottom-Up Review"; to talk a little bit about the point you raised, which is the fiscal implications of the "Bottom-Up Review," and where it fits into the overall economic deficit reduction package that the administration proposed in February, and where we think it is going to go in terms of the procurement bow wave and a few other things that are important. We know that this committee has always been interested in it.

Basically, what drove the "Bottom-Up Review" was the tremendous changes that have gone on in the last 4 years or so. The U.S. military used to be totally focused upon, in its defense budgets and its Defense Establishment, on the Soviet threat. And I think it would be almost impossible to overstate the degree to which our national security concerns were focused on the Soviet Union.

It determined the size of the defense budgets. It determined the way we organized our forces. It determined the way we trained our forces. It even determined the way we designed our weapons. The planes, the ships, and the tanks, they were designed with a war with the Soviet Union in mind. It was what drove everything. Now that is gone.

The question now is: How do we do all of that without the Soviet Union? How do we do budgets? How do we design our weapons? How do we do all of those things when the focal point of the last four or five decades has disappeared?

That is ultimately what drove us to this process of the "Bottom-Up Review." We said, "Look, it is time, after the cold war, postcold war, post-Soviet Union, to look at the world and say, What is it that we need a defense for now? What is the focus for it all? What are we trying to do?"



New Dangers

Bottom
Up
Review

- Proliferation of Nuclear Weapons and Other Weapons of Mass Destruction, Delivery Systems
  - Other Countries - North Korea, Iran, Iraq, etc.
  - Former Soviet Union
- Regional Dangers
  - Large-Scale Aggression, Intimidation
  - Ethnic, Religious, and Internal Conflict
  - State-Sponsored Terrorism
- Dangers to Democracy, Reform and Civil Order
  - In the Former Soviet Empire
  - In Developing World
- Dangers of a Weak Economy
  - Lack of Domestic Prosperity
  - Lack of International Competitiveness
  - Lack of Environmental Security

So we begin by asking the question: What is it that you need a national security establishment for and what are the national security concerns of the country?

We came up with a list of four dangers that in some way could threaten the national security of the United States. And if you look at the four of them, two of them are in what we traditionally think of as national security areas of concern, but there are two of them that go beyond what we normally think of as national security.

First of all, we have a new nuclear threat. The old nuclear threat used to be thousands of warheads in the hands of the Soviet Union. The new nuclear threat is a handful of nuclear weapons now possibly in the hands of a terrorist organization or a terrorist state. And that is a much more difficult world to deal with than the old threat from the Soviet Union.

That is real, that is important, and that is issue No. 1.

These four dangers appear, I want to say, in no particular order. We should not think of them in terms of one being more important than the other. The list is four, and you can put them in any particular order.

The second one is the regional dangers. Examples of regional dangers are Saddam Hussein or Noriega. It is a case where we need a competent and effective military force in order to deal with a specific threat of somebody who threatens our national security interest.

With the demise of the Soviet Union and conventional forces out there now that threaten our peace of mind, do not threaten the continental United States. But what they do threaten is our interests. They threaten our allies. They threaten some of our friends. And we need a force to be able to deal with them.

The third and fourth dangers are areas that go beyond traditional national security concerns. The third is the dangers to democracy. If reforms in the former Soviet Union and other parts of the world were to reverse themselves and we ended up with somebody who was more threatening, was a more threatening nationalistic dictatorship in that part of the world, that could complicate life for us. Certainly, it would be a more dangerous world, and it certainly would be a world which would be more expensive for our defense budgets. So we are not indifferent to the issue of what happens in the former Soviet Union, Russia primarily, but also all of the countries of the former Soviet Union.

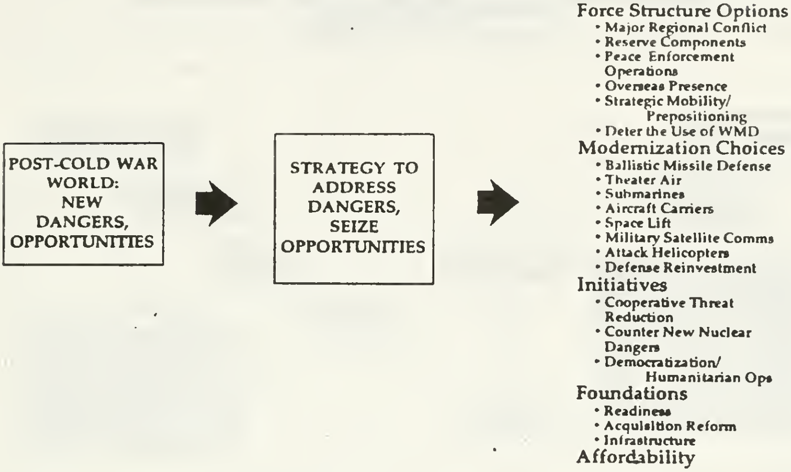
And it goes to the point, Senator, that you raised about defense, using defense money for Russian aid. I think a little of that is certainly something we ought to do. I mean, I think that this clearly is a national security interest and I think that some of this is something that we ought to be concerned about. And it will be a big difference to our future defense budgets if the path of reform leads to success in Russia.

The final threat is the weak economy, which really gets away from what we normally think of as national security interests. There is no question about what is our most important long-range national security interest, and that is the strength of the economy. In the short run, the national security of the United States is protected by a strong military establishment. In the long run, the national security of the United States is protected by a strong economy.

So those are the four dangers. We started out beginning this "Bottom-Up Review" by saying OK, no more Soviet Union, no more Warsaw Pact. What are the dangers? Now, what are the things you might be worried about that we might have a military establishment or national security establishment to deal with, and these are the four, so that is where we are.

Bottom - Up Review: Analytic Process

Bottom
Up
Review



POST-COLD WAR WORLD: NEW DANGERS, OPPORTUNITIES

STRATEGY TO ADDRESS DANGERS, SEIZE OPPORTUNITIES

Force Structure Options
- Major Regional Conflict
- Reserve Components
- Peace Enforcement Operations
- Overseas Presence
- Strategic Mobility/ Prepositioning
- Deter the Use of WMD

Modernization Choices
- Ballistic Missile Defense
- Theater Air
- Submarines
- Aircraft Carriers
- Space Lift
- Military Satellite Comms
- Attack Helicopters
- Defense Reinvestment

Initiatives
- Cooperative Threat Reduction
- Counter New Nuclear Dangers
- Democratization/ Humanitarian Ops

Foundations
- Readiness
- Acquisition Reform
- Infrastructure

Affordability

When we go to the next issue, what we did then was to put together a study that left out how do we move from those dangers to the kind of issues that we are dealing with in your bill, Mr. Chairman. We are looking at force structure options, modernization, choices, initiatives, foundations, and affordability.

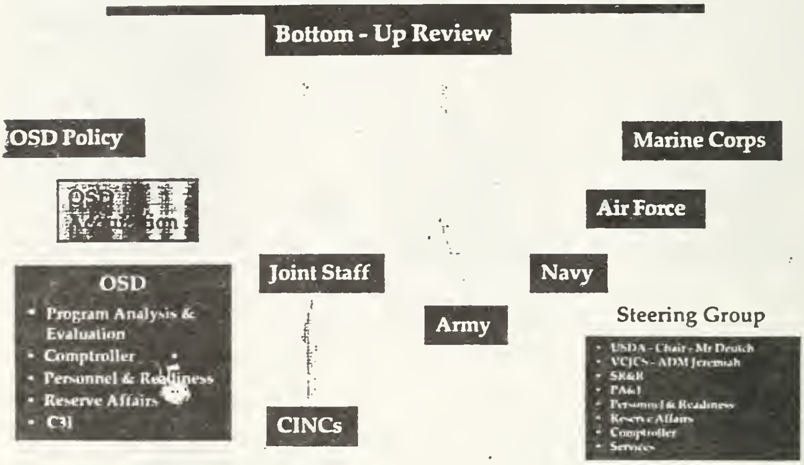
In other words, what we want to say is that this "Bottom-Up Review" was as comprehensive as I could make it, as comprehensive as we could possibly do. We looked not just at the weapons systems, we did not look just at the force structure, we looked at it all. We looked at the weapons systems, the force structure, we looked at the new initiatives we have in here for the new world, and we looked at the foundations which form the basis for the operating of the Pentagon. And as you see, Mr. Chairman, readiness is No. 1 under that, acquisition reform is No. 2, and the whole infrastructure is item No. 3.

All of those things relate to this defense budget. Infrastructure is bases, and we have all been through the agony of that Base Closure Commission. We are going to go through the agony of doing it again because it is so important that as we downsize the operating part of this business—the military—we also downsize the overhead part of it and the formalities, the base structure, et cetera, et cetera.

So all of this is the outline of where we are in terms of what the study did in the "Bottom-Up Review."

Unprecedented Collaborative Effort

Bottom
Up
Review



Bottom - Up Review

OSD Policy

OSD [illegible]

OSD
- Program Analysis & Evaluation
- Comptroller
- Personnel & Readiness
- Reserve Affairs
- C3I

Joint Staff

CINCs

Army

Navy

Air Force

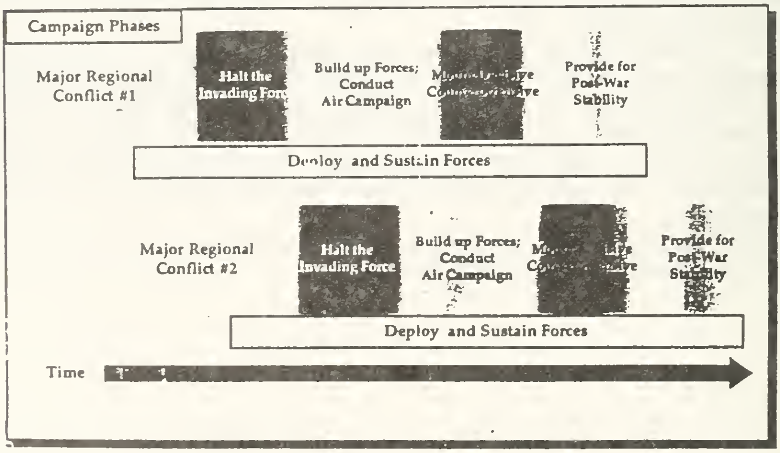
Marine Corps

Steering Group
- USDA - Chair - Mr Deutch
- VCJCS - ADM Jeremiah
- SR&R
- PA&E
- Personnel & Readiness
- Reserve Affairs
- Comptroller
- Services

This chart is just to say that the way the program was put together in the Pentagon was through a collaborative effort with all players involved—the military, civilian, each of the services, the Joint Staff, the CINC's, the various people involved in each case. On the civilian side we had people from various branches of the office of the Secretary of Defense, a lot of working groups, a lot of subgroups, all of this was part of the process but it was a very collaborative process, the uniformed people and the civilians working together very, very closely.

Winning Two Nearly Simultaneous Major Regional Conflicts

Bottom
Up
Review



Campaign Phases

Major Regional Conflict #1

Halt the Invading Force

Build up Forces; Conduct Air Campaign

Mount Decisive Counteroffensive

Provide for Post-War Stability

Deploy and Sustain Forces

Major Regional Conflict #2

Halt the Invading Force

Build up Forces; Conduct Air Campaign

Mount Decisive Counteroffensive

Provide for Post-War Stability

Deploy and Sustain Forces

Time

Now again, I want to refer to the chart over on the right, and I will talk about a couple of things in the "Bottom-Up Review."

Every one of those subitems that has got a little bullet has had a joint committee working that issue. So there is a lot to report to you on, and I just needed to pick out about two or three items on a couple of these categories, just to talk to you about what I think are the major issues here in the force structure options.

DEALING WITH REGIONAL CONFLICTS

The thing that drives the focus of this defense review, what we discovered as you look at those four dangers, the one that is the most important from the standpoint of how big a defense budget do we have is the issue of the regional dangers in the world that we may have to deal with. The list is finite and it is not very large. And it is a familiar list of names. It is Iran, it is Iraq, it is perhaps North Korea, a few more, if it comes to that.

But basically, we need to be able to deal with these people and this kind of set of threats. The key decision is how many of these threats do you think we need to be able to deal with simultaneously? That is the single most important decision that drove this exercise. And what we decided to recommend to all of you as you considered the budgets in the future is that we plan to be able to deal with two of these regional contingencies simultaneously.

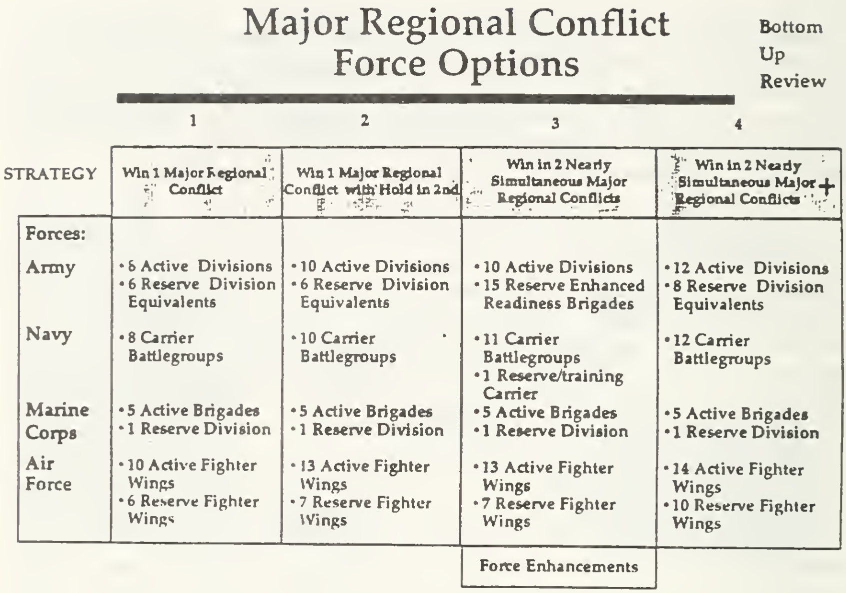
They will not happen exactly on the same day, but it could happen that the second one starts while the first one is being fought. And the reason we thought it was important to be able to deal with two at the same time is that if you do not have that capability to deal with two at the same time you are almost inviting the attack from the second one if you get involved in the first one.

And let me run the example. If we did not have the ability to take care of both at the same time, two at the same time, then you would be involved in, let us say, a Desert Storm kind of conflict, it would be a big temptation for North Korea to take advantage of that time to invade South Korea, if they had that in mind. If you did not have the capability to deal with two regional contingencies at the same time you get involved in one of them and it is an invitation for somebody to take advantage of the fact that you cannot do two at the same time. And that, basically, was the logic that drove our thinking in this.

So what we ended up with is a recommendation that we plan to deal with two major regional contingencies more or less simultaneously, and that is a big budget driver. If Congress decides that they wanted to take the risk of just dealing with one at a time, this defense budget can come down big time—very big time.

Senator STEVENS. But does it not work the other way, Les? What about the third domino?

Secretary ASPIN. A third domino would increase this budget. I will get into a couple of force structure options here. I think it is the next chart up. Anyway, move to the next chart up.



Major Regional Conflict Force Options

Bottom
Up
Review

	1	2	3	4
STRATEGY	Win 1 Major Regional Conflict	Win 1 Major Regional Conflict with Hold in 2nd	Win in 2 Nearly Simultaneous Major Regional Conflicts	Win in 2 Nearly Simultaneous Major Regional Conflicts +
Forces:				
Army	• 6 Active Divisions • 6 Reserve Division Equivalents	• 10 Active Divisions • 6 Reserve Division Equivalents	• 10 Active Divisions • 15 Reserve Enhanced Readiness Brigades	• 12 Active Divisions • 8 Reserve Division Equivalents
Navy	• 8 Carrier Battlegroups	• 10 Carrier Battlegroups	• 11 Carrier Battlegroups • 1 Reserve/training Carrier	• 12 Carrier Battlegroups
Marine Corps	• 5 Active Brigades • 1 Reserve Division	• 5 Active Brigades • 1 Reserve Division	• 5 Active Brigades • 1 Reserve Division	• 5 Active Brigades • 1 Reserve Division
Air Force	• 10 Active Fighter Wings • 6 Reserve Fighter Wings	• 13 Active Fighter Wings • 7 Reserve Fighter Wings	• 13 Active Fighter Wings • 7 Reserve Fighter Wings	• 14 Active Fighter Wings • 10 Reserve Fighter Wings
			Force Enhancements	

We will get to the point.

Here is where we get to it, Senator Stevens. There are four different options of how we might do it. The ones over on the left are the forces that you need to deal with only one major regional conflict at a time by itself. And then, of course, after that ended, presumably the forces would become available to address a second conflict.

The second and the third columns there talk about the forces that you need to address two conflicts nearly simultaneously, and the difference between them is what we mean by nearly simultaneously.

The fourth one is the one that you asked about, Senator Stevens, and that is winning two simultaneously plus having the capability to do another smaller operation. We did not actually look at an option here. We could run an option for you, if you are interested, of what it would take to run three regional contingencies simultaneously. But we looked at these four force structure options.

Essentially, No. 4, the fourth option out there, is pretty much what we have under the base force option that we inherited, that the Bush administration had proposed or was operating under. You win two nearly simultaneous major regional contingencies plus some capability beyond that. They did not have the capability to deal with three. So if you had to deal with three you would have to increase the last administration's number, not just restoring their base force numbers.

The difference between column two and column three is how close you would want to be able to fight them. We looked at one option because it was suggested by one of the working groups of being able to win in one case and hold on the other called win-hold-win, where you fight to win in one of the regional contingencies and you just hold the forces in the second until the first one is finished, and then you swing the forces over and fight the second one again. Ultimately, we decided against that option and decided on the options in column three.

The differences between column two and column three, the difference between them is essentially the critical force enhancements. These are the issues that make the difference between column two and column three.

Senator STEVENS. Could I back up just a minute? Does the existence of our treaties, where we have mutual defense treaties in place, does that have anything to do with this concept of tying it to the possibility of two regional engagements? What about the ability to fulfill the treaty obligations of the United States?

Secretary ASPIN. I think what we have got, in covering these two major regional contingencies, I think we are maintaining our ability to fulfill our treaty obligations. I mean, the treaty obligations, most of those, of course, were oriented toward an existing Soviet threat. That Soviet threat is gone. We still have a NATO commitment that an attack on one ally is an attack on all, et cetera.

Senator STEVENS. You have a series of them in the Pacific that came to my mind.

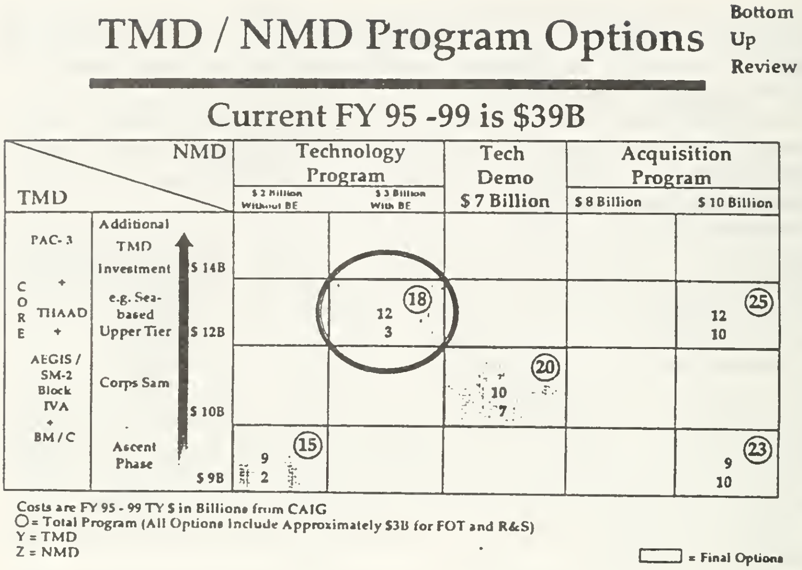
Secretary ASPIN. That is the point about the two regional contingencies, that you would have enough forces to deal with one contingency in say, roughly, the Persian Gulf area and a second contingency in the Pacific. And it was our view that we really did need to have two pretty separate generated forces that could deal with these things and not have to worry about the fact that all of our forces are committed in the Persian Gulf.

Let me go back over to the chart on the right for a second. That is pretty much all we are going to say about the force structure options, unless somebody has some more to discuss or somebody wants a further briefing by my staff. But basically, the force structure, and there is a lot more to be discussed regarding force structure options, but the main thing that drives the budget here is this critical decision. It is critical because of the important decision we've made to be able to fight and to win two regional conflicts simultaneously. That is the most important part about that force structure option.

BALLISTIC MISSILE DEFENSE

We will next turn to the modernization choices, and there I want to talk about four modernization choices for your consideration and just briefly go over where we came out on ballistic missile defense, where we came out on theater air, where we came out on submarines, and where we come out on aircraft carriers, because these are four of the biggest impacts on modernization budget. We would like to talk about those for a second.

Let us turn first to the ballistic missile defense.



TMD / NMD Program Options

Bottom
Up
Review

Current FY 95 -99 is $39B

TMD \ NMD			Technology Program $2 Billion Without BE	Technology Program $3 Billion With BE	Tech Demo $7 Billion	Acquisition Program $8 Billion	Acquisition Program $10 Billion
PAC-3 + THAAD + AEGIS / SM-2 Block IVA + BM / C CORE	Additional TMD Investment	$ 14B					
	e.g. Sea-based Upper Tier	$ 12B		⑱ 12 3			㉕ 12 10
	Corps Sam	$ 10B			⑳ 10 7		
	Ascent Phase	$ 9B	⑮ 9 2				㉓ 9 10

Costs are FY 95 - 99 TY $ in Billions from CAIG
○ = Total Program (All Options Include Approximately $3B for FOT and R&S)
Y = TMD
Z = NMD

▭ = Final Options

What we did, Mr. Chairman, is to look at what do we want to do with the SDI program now that the Soviet Union has dissolved and start thinking about what kind of a defense do we need that would be relevant to the new kinds of dangers that we see in a world in which smaller countries now have smaller numbers of nuclear warheads potentially controlled by terrorist groups or terrorist organizations.

What this chart shows is that we looked at several options to see what kind of defense we might have. There are two parts of the ballistic missile defense that are now relevant. One is the theater missile defense, because that threat is here and now. We saw what happened with Scud's in Desert Storm. This is a threat that is here now.

What we need to do, and what we decided to do, basically, is to now focus the ballistic missile defense program on the issue of the theater missile defense, defenses against Scud's and other short-range missiles that will threaten our allies or that will threaten our troops on the ground.

So that is the first part. The second is a lesser amount of spending on the national missile defense program, which is just conducting research into it some time in the future, looking into research into a ground-based system that would be treaty compliant and that might be deployed some time in the future.

The option that we picked was the option given in that red circle there, and that is a 5-year ballistic missile defense program which would cost $18 billion. And $12 billion of that is in the theater missile defenses, upgrading Patriots, coming up with a replacement, building the THAAD, which is the theater high altitude air defense system, Aegis, and some of the others. Almost two-thirds of the money is focused on theater missile defense.

Senator BUMPERS. Mr. Chairman, may I ask a question at this point?

Senator INOUYE. Sure.

Senator BUMPERS. Mr. Secretary, does this anticipate an annual spending of $3 billion? As you know, the Senate is now at the House level of $3 billion so that is not going to be a conferenceable item. But you show a total of $18 billion. Is that to complete this theater missile defense system?

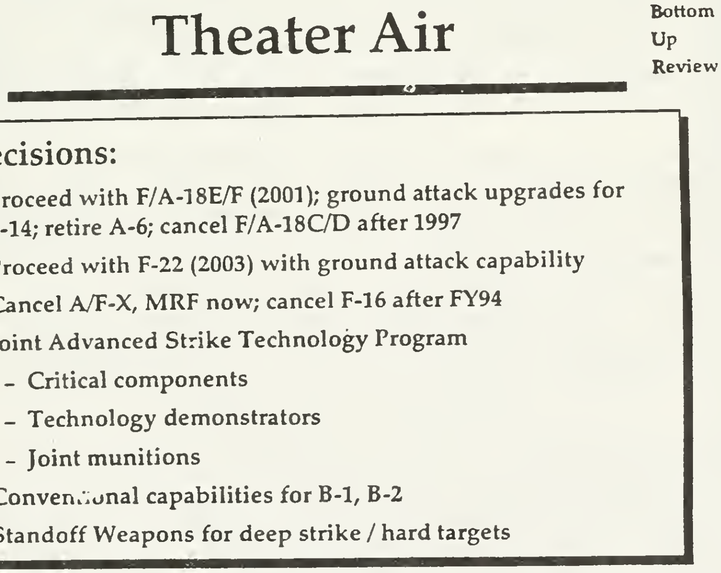
Secretary ASPIN. There is no one theater missile defense system. It is a series of overlapping. If we have an $18 billion 5-year program, which would be a little more than $3 billion a year according to this plan.

Senator BUMPERS. You think that will do what you want to do?

Secretary ASPIN. It will do what we want to do, yes, sir. And as I say, this is an $18 billion program over 5 years, which compares to the data that is in the Bush program of $39 billion over that 5 years. So there is a $21 billion savings in the SDI program in our 5-year program, compared to the baseline, the base force which we inherited from the previous administration.

Senator BUMPERS. Does this anticipate level funding during that 5-year period?

Secretary ASPIN. Yes, sir; we think it is better to have level funding rather than having it jump around a little. It makes for better management of the program.



Theater Air

Bottom
Up
Review

Decisions:

- Proceed with F/A-18E/F (2001); ground attack upgrades for F-14; retire A-6; cancel F/A-18C/D after 1997
- Proceed with F-22 (2003) with ground attack capability
- Cancel A/F-X, MRF now; cancel F-16 after FY94
- Joint Advanced Strike Technology Program
  - Critical components
  - Technology demonstrators
  - Joint munitions
- Conventional capabilities for B-1, B-2
- Standoff Weapons for deep strike / hard targets

The next item is the theater air which I know is of interest to members of this committee. What we did in the theater air program—part of the problem with the theater air was that we had a lot of ongoing programs that we, frankly, did not think we would be able to afford. There was an awful lot of aircraft programs in the plan and they were beyond what we thought we could afford in terms of where budgets were going.

Plus we needed to think through a little more carefully about what it was that we wanted the theater air to do and what we wanted various services to do. We wanted to integrate the capabilities of the Navy and the Air Force, but also Marine Corps and other kinds of aircraft into the theater air package.

And we also decided to focus on the current problems, rather than trying to solve this problem for 30 years knowing that others will follow us and may have different idea, plus the threat is likely to change and the world is likely to change. We do not think anybody can look out with any confidence about what the theater, what the air threat is going to be that far in advance.

So basically what we came down with was the decisions that you see on the chart here. We want to proceed with the F/A–18E/F model. We want to do the ground attack upgrades for the F–14. We want to retire the A–6, cancel the 18C/D's after 1997. We want to proceed with the F–22 and add to it a ground attack capability. Then the systems that fall out of this decision are the A/F–X and the multirole fighter, and canceling the F–16 after fiscal year 1994.

COMMONALITY BETWEEN AIR FORCE AND NAVY AIRCRAFT

The key in the long term is this interesting idea about the joint advanced strike technology program, which is a program to try and develop commonality between the Air Force and the Navy on aircraft. There is a long history of that but not much successes. Members of this committee will certainly remember that we had a big fight over the T/F–X. At the time, the gentleman from Arkansas' predecessor was at the forefront of that fight, Senator McClellan. And I remember it well because I was an analyst in the Pentagon then.

And it was a humongous fight. The Secretary of Defense, Mr. McNamara, wanted the Air Force and the Navy to buy a plane together. The Navy wanted a plane that would fly off a carrier, the Air Force wanted a plane that had range and payload, and you could not make those match, or at least the two bureaucracies who were working the issue did not make them match.

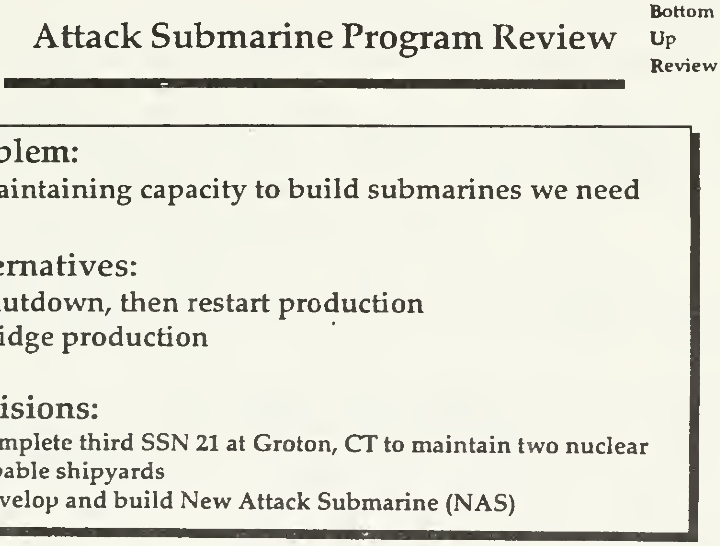
And it was a very contentious issue that consumed an awful lot of time in the building and over here in the Congress at the time. It was only one in a series of fights to try and somehow make Air Force and Navy planes share common features. We could save tremendous, tremendous dollars if we could get them to buy the same plane because, you know, you would just be buying a single model in large quantities and it would save billions.

But the difficulty has always been to meet the differing requirements of the two services. In fact, the only time we have had commonality was when one service developed a plane that the other service eventually decided to buy. The F–4 was a plane common to both the Air Force and the Navy. It was a Navy plane that the Air Force decided that they liked well enough to buy it.

But starting out to design that kind of a plane from the two perspectives of the two services has never had much success. We are going to try a different approach here. What we are going to try and do here is say, "Let us not try and make a common plane; let us take the critical components of the plane and try to make them common: the engines, the avionics, et cetera."

There is about 70 or 80 percent of the planes, the components of the plane, that we might make common. And then we would let the two services design the plane around those common elements as they like. So the silhouette of the Air Force plane is going to look very different from the silhouette of the Navy plane. The Navy plane has got to fly off a carrier so it needs a short runway. The Air Force plane, you need range and payload which is a different design of the plane altogether.

So you have different silhouettes of the planes. The plane will look differently on the outside, but the commonality, the dollar savings will be because they are buying common parts, common engines, common avionics, et cetera. And I think this is an interesting approach. I think in this there is promise. It is at the core of what we want to do here with theater air. It is a brand new initiative. It is a new approach to an old problem, Mr. Chairman.



Attack Submarine Program Review

Bottom
Up
Review

Problem:
- Maintaining capacity to build submarines we need

Alternatives:
- Shutdown, then restart production
- Bridge production

Decisions:
- Complete third SSN 21 at Groton, CT to maintain two nuclear capable shipyards
- Develop and build New Attack Submarine (NAS)

ATTACK SUBMARINE PROGRAM

The next item I want to talk about is the attack submarine program. There are, maybe, a few members here that might be interested in submarines. What we have discovered—we began with an analysis of how many submarines we wanted to have. And we found out that the number of submarines we wanted to have is, not surprisingly, a lot less than the number of submarines that we do have.

In fact, one of the interesting things that this analysis showed is that the Navy of the future is going to be more aircraft carrier rich vis-a-vis submarines than, say, the Navy of the past when the job of the U.S. Navy was to tangle with the Soviet Navy. A very important component of that was control of the seas. They had to gain control of the seas to supply our troops in Europe where we thought the war would be going on. The focus of the Navy was on gaining control of the seas over the Soviet Navy.

The whole issue was whose navy would be supreme on the seas after the war started, and the focal point of that was, of course, the attack submarines. The attack submarines were what we relied on to achieve American supremacy of the seas in a war with the Soviet Navy. At the same time an aircraft carrier, I know—John Lehman's views to the contrary notwithstanding, an aircraft carrier looked pretty vulnerable in a war with the Soviet Union, particularly if that war with the Soviet Union went nuclear, the aircraft carrier looked like a pretty ripe target.

And, as you all know, we found ourselves over the years spending more and more and more money to protect that aircraft carrier. You had to have more escort ships, Aegis cruisers to shoot down missiles, and they began—they were costing $1 billion apiece. So the whole protection of an aircraft carrier became very expensive, and an aircraft carrier task force became a very very expensive proposition.

So in a world in which the United States Navy was looking at the Soviet Navy, aircraft carriers were getting harder and harder to deal with, and submarines were becoming more and more important. The Soviet Union now has split into many independent republics. There is no more monolithic navy out there to challenge the U.S. Navy for supremacy of the seas. It has changed the mix between aircraft carriers and submarines dramatically.

We do not need the kind of submarines we needed before because there is nothing equivalent to the Soviet Navy out there, and control of the seas is a given. We do not have to worry about the U.S. Navy controlling the seas. On the other hand, what has happened in this new world is that aircraft carriers are making a comeback. Aircraft carriers are now becoming more and more important because it is a way to get aircraft into critical areas where we, perhaps, do not have access to land-based airfields.

And, indeed, aircraft carriers are becoming more feasible now because we do not have to load them up with all the protection that we used to when we were worried about the Soviets. We can now essentially put aircraft carriers out there with less in the way of protection, because there is nobody that has the ability to attack aircraft carriers as the Soviet Union did.

What this means is that in the post-Soviet new world the United States is going to have relatively fewer aircraft carriers and submarines. In fact, the number of submarines is probably going to go down to less than one-half, somewhere in that area. The number of aircraft carriers is probably going to drop by one or two. We are going to still need somewhere in the neighborhood of 11 to 12 aircraft carriers.

So what this means is in this case of the submarines we do not need the same kind of submarines we needed before. If you do not need the same kind of submarines that we needed before—and the number looks like about one-half, maybe about 45 submarines. Starting out we had 88; we now have 81 submarines. Which means it is going to be a long time before we need to build another submarine. There just is going to be a big gap in the production of submarines here. Because the number is coming down, we can just take the oldest submarines and decommission them as the number comes down. You do not need to build any more.

SUBMARINE INDUSTRIAL BASE

The question is an industrial base question: What happens to the gap? What happens when you do not need to build submarines? Eventually we are going to have to build a submarine to replace the ones that exist, but we have a gap here. And there are two ways to deal with the gap. We looked at both of them and costed them out. One is to just stop the production of everything and let it sit and wait and then start it up again, a very very difficult proposition when you are talking about nuclear capabilities. Or the other is to build a submarine to bridge the gap and maintain the industrial base, at least, to build submarines while we have this gap.

Our recommendation to all of you is that we build that bridge submarine, and we directed construction of it to go to the Groton Yard. Therefore, we keep the capability to develop that submarine. It certainly is not going to keep the employment where it was in Connecticut, but it will have some—at least will hold together the industrial base for that.

Senator STEVENS. What about the Seawolf, Mr. Secretary?

Secretary ASPIN. That is what we are building. We will build the Seawolf. We are recommending to build the Seawolf in Groton, CN, in the gap production there.

Senator BUMPERS. You had two in production.

Secretary ASPIN. Already being built.

Senator BUMPERS. When are they going to come on stream?

Secretary ASPIN. We think 1997 is the first one, and 1998 or 1999 the second would be finished. We will look it up and get it for you.

Senator BUMPERS. Is this asking for long-lead items now?

Secretary ASPIN. We already have the long lead. We are now going——

Senator BUMPERS. They are capable of producing three at one time?

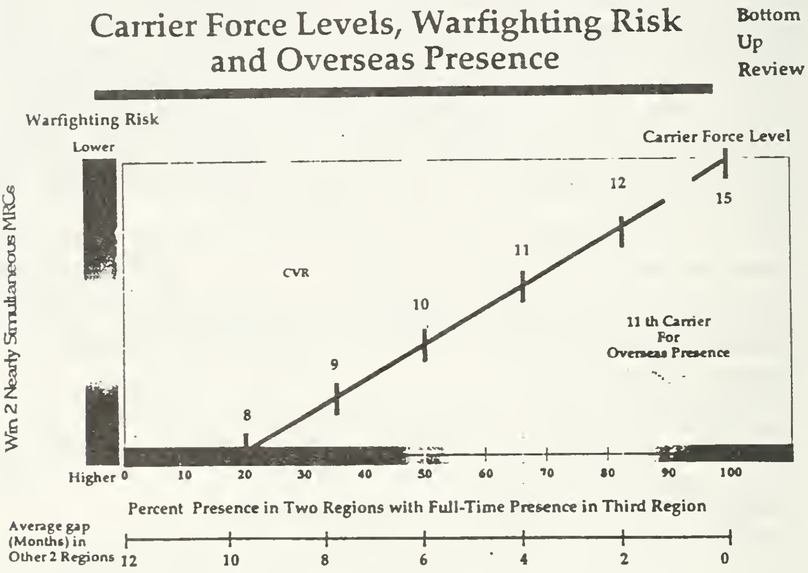
Secretary ASPIN. As it moves along. I mean, we are not going to rush the production of this thing. We will tell them take your time. [Laughter.]

But we want to keep the industrial base capability, the subcontractor base and the nuclear capability to do it. So we are not going to pile it on there, but we would like to be able to phase in the work as the work on the other two submarines gets completed, Senator.

Senator STEVENS. May I ask a question there? Why nuclear? Are we looking at long-range nonnuclear submarines?

Secretary ASPIN. That issue has resurfaced, Senator, and we are looking at it again. It was really a question that was not particularly interesting when we were looking at the Soviet Union because, of course, what we really needed were submarines that could take on the Soviet Navy and go far, and stay under, and engage the Soviet Navy far from our shores.

The issue is being looked at again. Indeed, we are looking at building another submarine, you know, designing another submarine other than the Seawolf, a smaller version for when we really do get back into the submarine business after this gap where we do not need to build more submarines. It probably will be nuclear, but we are looking at the nonnuclear issue.



AIRCRAFT CARRIER FORCE LEVEL

Let me just cover one other item. Looking at those modernization choices, the ballistic missile defense, theater air, attack submarines, let us just talk about aircraft carriers and then we will get out of this modernization business.

As I was saying, comparing aircraft carriers to submarines, we are going to need relatively fewer aircraft carriers and attack submarines. The interesting thing is that the number of aircraft carriers that you buy—one of the most interesting things about this study, this bottom-up review, is that it showed that all of the capability that we needed to buy for the two major regional contingencies, that determined the force structure, and everything else that you bought was a lesser included part of those two regional contingencies. And if you needed presence forces, you needed forces to do peacemaking or peacekeeping forces, they were subsumed in the two major regional contingencies.

So, you size the forces essentially for the two major regional contingencies, and then if you needed 4,500 of them to go do peacekeeping in Somalia, you just took some of them out of the two major things. Or if you were using them for Bosnia or something else, you would take them out of the forces that were designed for the two major regional contingencies.

That works in almost every case, but there are a couple of cases where it does not give you enough forces because of something else, another concern, and one of these is carriers for overseas presence. Actually, the number of carriers that we decided we wanted to recommend was related both to the issue of overseas presence and to major regional contingencies.

We recommended a force of 11 active carriers and 1 reserve carrier for a force of 12 carriers, 1 carrier being used for training pilots and for reserve. Really 11 or 12 carriers there, depending on how you define that last carrier. That is a force that we are recommending and it is more than you need to deal with two major regional contingencies. But what it does is it allows you to have the kind of peacetime overseas presence that we need around the world.

What the chart shows is that there are three regions of the world that we historically have wanted to have presence in with aircraft carriers. One is the Mediterranean area, the other is in the Persian Gulf area, and the third is in the Pacific.

What kind of coverage you can have in those three areas depends upon how many carriers you buy. In fact, what the chart shows is that if you buy 10 aircraft carriers you can have full coverage 100 percent of the time in one of the three regions, but you only get 50 percent of the time in the other two regions. So, you can have 100 percent in Pacific and 50 percent of the time the Mediterranean or the Persian Gulf. Or, 100 percent in the Persian Gulf, 50 percent in the Mediterranean, and 50 percent in the Pacific.

If you go to 11 carriers, you can do 100 percent of the time in one and two-thirds of the time in the others. And you see the difference is if you get up to a full 12, you can get out to 80 percent; 90 percent in the 2 and a full 100 percent in 1.

That is translated to gaps in months in the other two regions in the bottom of the chart. It shows you, for example, if you have 10 aircraft carriers, you have got 12 months' coverage in 1 of the 3 regions, 6 months coverage in the other 2 regions.

And there are a couple of things to be said about this. First is that just because you do not have a carrier does not mean you do not have any naval coverage.

Senator BUMPERS. If I may interrupt you at that point, how many carriers are you anticipating to give you 100 percent coverage in an area? How many carriers do you have to have in that particular region?

SUPPORTING A STRONG NAVAL PRESENCE

Secretary ASPIN. What you have is the carriers relate to how long they stay on station. As one carrier transits back to home and then there is another getting ready to come out, you need three, three to four carriers to have one on station all the time.

Senator BUMPERS. I understand that, but if we are talking about, say, 100 percent coverage in the Mediterranean according to your terms, your definition, how many aircraft carriers is that in the Mediterranean at all times?

Secretary ASPIN. One, unless there's two transporting.

Senator BUMPERS. Is that same thing true of the other two regions?

Secretary ASPIN. Yes.

Senator BUMPERS. What you are saying is you only need three aircraft carriers on duty, one in each of those three regions, to give you 100-percent coverage?

Secretary ASPIN. Exactly.

Senator BUMPERS. And you are saying with 11 carriers you cannot meet that?

Secretary ASPIN. Exactly.

Senator BUMPERS. Well, talk a little bit more about that. Why is that?

Secretary ASPIN. Well, the carrier is on station 6 months of the year. In other words, you send the——

Senator BUMPERS. Where are the other eight during that time?

Secretary ASPIN. They are in the process of transiting back to home. Some of them are in major overhaul. Some carriers go into overhaul and then they are out for a year or more in overhaul.

I mean, the mathematics of the thing work out, Senator, that these are the numbers that you get. If you really want 100 percent of the coverage on all 3 regions, you need 15 carriers.

Senator BUMPERS. A total of 15 carriers to keep 3 carriers on duty all the time? That is a hell of a lot of money.

Secretary ASPIN. It is a lot of money. It is less money than it used to be because you do not have to have all the escorts with it and all the protection. It is a better proposition than it used to be. In the old days, it was really getting to be prohibitively expensive when we were worried about those carriers being attacked by the Soviet navy. But it is a serious proposition.

Let me also make the point that just because you do not have a carrier on the station does not mean that you do not have any presence. There are lots of ways to get presence out of other types of ships, the smaller vessels of carriers and things. So, I think very often we get psychologically hung up on the existence of a carrier and we should not let that happen. It does not mean that we have no presence or that we have no capability to do things without a carrier.

In fact, the attack that we conducted on Iraq in retaliation for the assassination attempt on President Bush provides such an example. Remember when convincing evidence was finally collected by the Justice Department and the CIA that, in fact, Iraq was behind an attempt on George Bush's life when he visited Kuwait? When that word came in the Clinton administration ordered a retaliation attack against Iraq. It was done during a time when there was a carrier gap. There was not a carrier there.

It was done by cruise missiles off of the submarines and off the ships—not submarines in their case, but off of other ships. I think lots of times people tend to overstate the need for a carrier. Just because we do not have a carrier does not mean that we do not have a capability and we do not have a presence. We should not let ourselves get hung up on that. But a carrier is a very visible presence.

CARRIERS DURING WAR

Senator INOUYE. As a matter of clarification, Mr. Secretary, at the height of Desert Storm we had on station six carriers, did we not?

Secretary ASPIN. We did.

Senator INOUYE. What you are talking about, presence, is in a noncombat situation.

Secretary ASPIN. Exactly.

Senator INOUYE. Nonwar situation.

Secretary ASPIN. Exactly. That should probably help explain that. That does help explain Senator Bumpers' puzzlement here. This is a routine deployment.

I mean, clearly if you get to a crisis you surge them and you get everybody who is not in long-term overhaul out there and on station. So, we had six carriers there in Desert Storm. And you could get virtually, I do not know, three-quarters of the fleet out there on a surge basis if it becomes necessary.

Senator INOUYE. In other words, Mr. Secretary, if we happen to have two conflicts of Desert Storm level, under your plan we will not be able to do it.

Secretary ASPIN. Well, I think that basically what you have to look at is a combination of all the of air assets that would be in the region at the time. I mean, you have not only the planes that fly off of carriers, you also have got U.S. Air Force planes that would be flying off of airfields in the region. You have long-range bombers. One of the parts of our air program here is to convert the B–1 and the B–2 bombers, particularly the B–2 bomber, into a conventional bomber that would go early in these regional conflicts.

Senator INOUYE. Mathematically, if you have 6 at 1 station and at a minimum you will have 2 in transit, you will have a minimum of 2 in either overhaul or repair and 1 in training, that is 11 right there.

Secretary ASPIN. Yes.

Senator INOUYE. And we do not have the second conflict.

Secretary ASPIN. You probably end up with three or four carriers. But as I say, the amount of air power that you need to deal with these regional conflicts should not be looked at as just planes coming off of carriers. You have to look at the whole component.

And what we did in these major regional contingencies was to essentially put the package together with different mixes. And indeed, just because we had two regional contingencies does not mean you would split the carrier fleet between them evenly.

What you really want to do is look at—we assume that these two wars would both take place in where we think they would be. One is in the Persian Gulf and the other is on the Korean Peninsula. If those took place you would probably not split the carriers evenly.

Also I would point out that if the wars occurred on those two cases, those are both made to order for United States Air Force capabilities because there are a lot of airfields in Saudi Arabia, as we discovered in Desert Storm, and in South Korea if we get into another war with North Korea. So, from a standpoint of air power those would be ideal scenarios because we would be less reliant on the aircraft carriers.

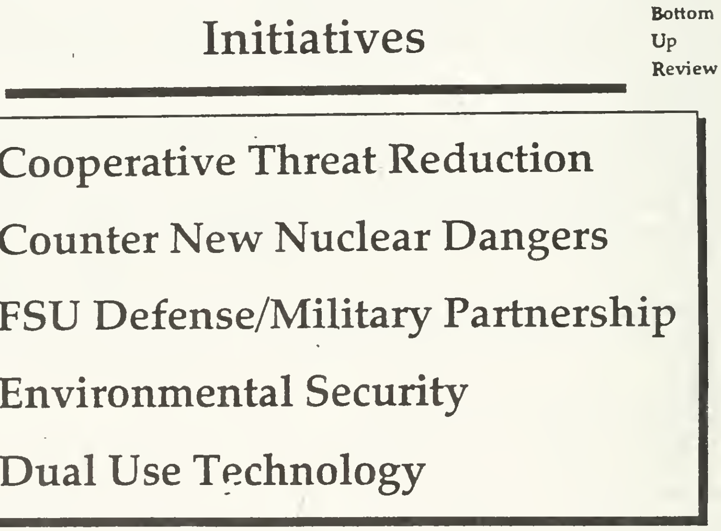
Senator INOUYE. And another point of clarification. With the proposal that you have made, the OPTEMPO would mean that our personnel would have to be on station for 6 months. If you cut it further you will have to go 8, 9, 10 months.

Secretary ASPIN. Yes; we do not want to do that.

Senator INOUYE. Once you do that you are not going to recruit anyone.

Secretary ASPIN. Absolutely. We tried that in the late seventies and it was a disaster. One of the things we tried to vary was the 6-month deployment, and we crept it up to 7-, 8-, 9-month deployment, and we found people were just not reenlisting in the Navy. We do not want to deviate from the 6-month deployment.

I am not saying that we would not do it if we found ourselves in a crisis, in a war. I mean, we did deviate from it during Desert Storm. But I think that people would understand that. But it is on a routine basis I think you do not want to deviate from that if you want to keep people joining and reenlisting in the Navy.

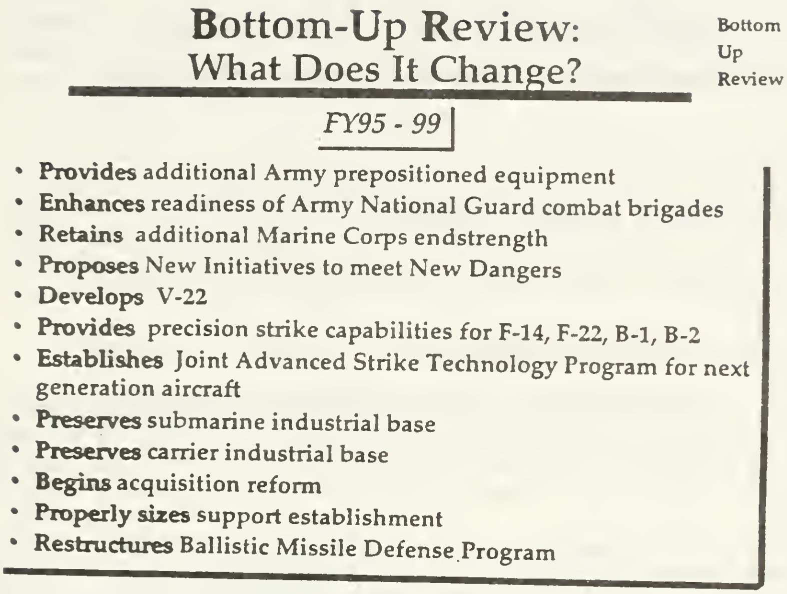


Initiatives

Bottom
Up
Review

- Cooperative Threat Reduction
- Counter New Nuclear Dangers
- FSU Defense/Military Partnership
- Environmental Security
- Dual Use Technology

Let me move on to another couple of issues. We have done force structure. We have done modernization choices. We would like to now just look at the initiatives. These are the things that we have in the bill that we would like. These are things that we are now adding to the bill because they are important things for us to do, to counter nuclear dangers, undertake cooperative threat reduction, build a partnership with the former Soviet Union, all of this kind of stuff.



Bottom-Up Review:
What Does It Change?

Bottom
Up
Review

FY95 - 99

- **Provides** additional Army prepositioned equipment
- **Enhances** readiness of Army National Guard combat brigades
- **Retains** additional Marine Corps endstrength
- **Proposes** New Initiatives to meet New Dangers
- **Develops** V-22
- **Provides** precision strike capabilities for F-14, F-22, B-1, B-2
- **Establishes** Joint Advanced Strike Technology Program for next generation aircraft
- **Preserves** submarine industrial base
- **Preserves** carrier industrial base
- **Begins** acquisition reform
- **Properly sizes** support establishment
- **Restructures** Ballistic Missile Defense Program

Let me put these two off on one side. I just have a little survey for you. I will not go through these things, but I would like you to look at it. The question is, What does the bottom-up review change? The reds are the places that the bottom-up review cuts from the base force. The greens are the things that we add to the base force. So, it is not all cutting.

In other words, the bottom-up review does not always in all cases end up with less of something than the base force does. The bottom-up review, for the most part, reduces the base force capabilities. But there are some cases where we add to it.

Senator BUMPERS. Let me ask you a mundane question. How many civilians work for the Defense Department?

Secretary ASPIN. I do not have the exact number right now. Just under a million is the rough number.

Anyway, these are the two numbers. You have got it in your handout if you are interested in it.

Affordability Analysis

Bottom
Up
Review

- Defense Spending and Economy
- Budget Changes--Bottom-Up Review
- Bow Wave Issue

Let me just briefly now take a little time here to go through the numbers and the affordability and what it does. What do we want to say about how much all of this is going to cost? The bottom-up review—how much is it going to save and what is going to happen here?

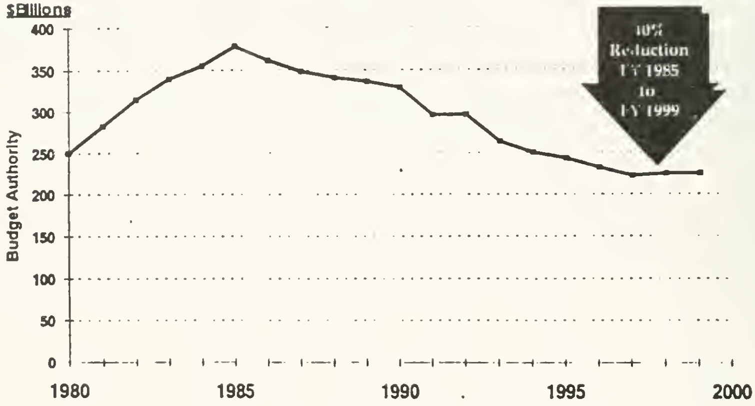
The defense spending and the economy, we are going to talk a little bit about that. The budget changes from the bottom-up review and the bow wave issue, how that is going to be different under this than the base force. Concerns about bow wave procurement, that we are postponing a decision, and eventually it will come up in a big bow wave to hit us when we get out beyond the 5-year plan here.

Let us take the first one.

DoD Spending: 1980-1999

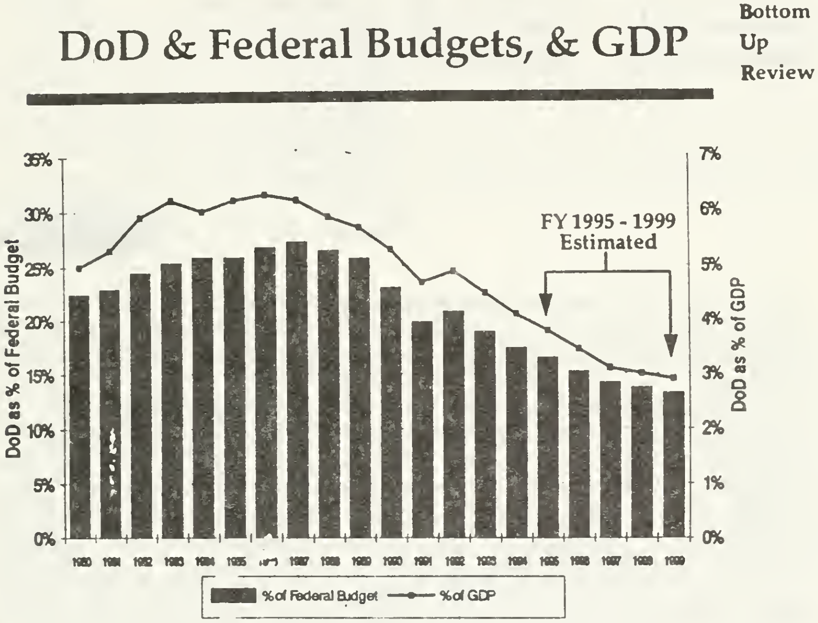
Constant FY 1994 Dollars

Bottom
Up
Review



This is what has happened to defense spending in constant 1994 dollars over the years. Defense spending really peaked in 1985 and has been coming down ever since. It has, as Senator Domenici knows and all of us that used to deal with it on the Budget Committees, come down. By the end of the 5-year plan here that we are presenting here, if it is followed, defense spending will be 40 percent less than it was in the peak year.

So, at one time people used to say—you remember somebody would say, oh, look what is happening. Defense spending should come down 25 percent, and other people would say it should come down 50 percent. It is pretty close to 50 percent. In fact, that is a little bit more than 40 percent. It is going to be 41.3 percent less than 1985 by 1999.

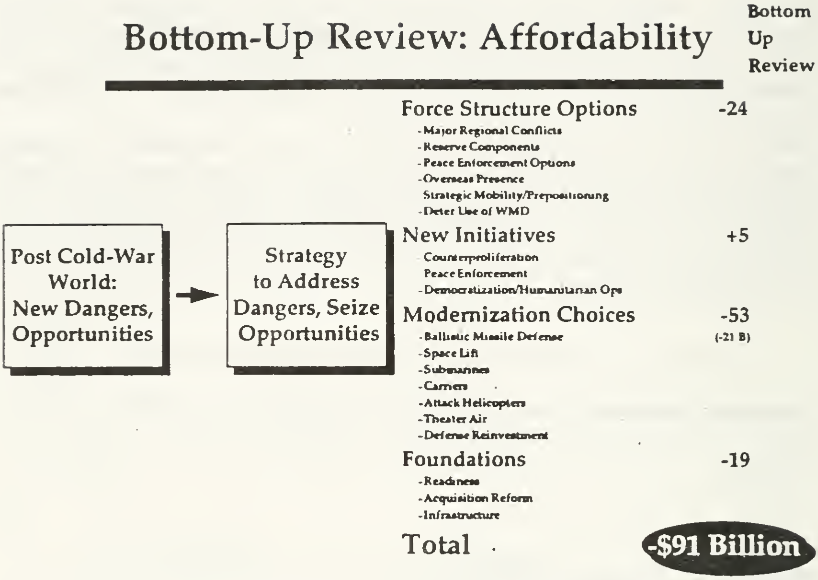


The next chart shows what is happening to defense spending. On the right-hand side is the percentage of gross domestic product. On the left-hand axis is the percentage of the Federal budget. It is going to be down to less than 3 percent of GDP, which is very low historically, and it is going to be down to less than 15 percent of the Federal budget by 1999.

Fifteen percent. You remember the days when it was the biggest thing in the Federal budget?

Senator STEVENS. It is about the level of the days before World War II.

Secretary ASPIN. Yes, yes; it is. It is getting way down there.



Bottom-Up Review: Affordability

Bottom
Up
Review

Post Cold-War World: New Dangers, Opportunities

Strategy to Address Dangers, Seize Opportunities

Force Structure Options -24
- Major Regional Conflicts
- Reserve Components
- Peace Enforcement Options
- Overseas Presence
  Strategic Mobility/Prepositioning
- Deter Use of WMD

New Initiatives +5
- Counterproliferation
  Peace Enforcement
- Democratization/Humanitarian Ops

Modernization Choices -53
- Ballistic Missile Defense (-21 B)
- Space Lift
- Submarines
- Carriers
- Attack Helicopters
- Theater Air
- Defense Reinvestment

Foundations -19
- Readiness
- Acquisition Reform
- Infrastructure

Total -$91 Billion

Here are the changes that come about because of the bottom-up review. And we have put numbers connected with each of the reviews that we did on the right-hand side, and how much it is going to affect it.

The force structure options that we are discussing will save $24 billion. So that you cut the force structure changes that we are recommending, compared to the Bush baseline, $24 billion will come because of a smaller force structure option; $53 billion will be cut because of the modernization choices. Fully $21 billion of that will be because of cutbacks in the SDI or changing the SDI program.

In fact, the ballistic missile defense is the biggest savings on the chart. You get almost as much savings out of changing the ballistic missile defense program as you get out of changing all the force structure options that we did. So you get $24 billion in savings from all the force structure changes and you get $21 billion from reorienting SDI.

Senator BUMPERS. Mr. Secretary.

Secretary ASPIN. Yes.

Senator BUMPERS. Do you still consider the—well, now what we call ballistic missile defense, is that still a research project?

Secretary ASPIN. In the theater missile defense, it is production. In the national missile defense——

Senator BUMPERS. Mostly the advanced Patriot?

Secretary ASPIN. The advanced Patriot and a new system called THAAD and an upgraded AEGIS. Plus they are working with something called CORSAM. There are a number of programs going on and they are all heading for hardware.

In terms of the national missile defense, it is totally research at this point.

Senator BUMPERS. OK.

Secretary ASPIN. OK.

The force structure options are netted out. Let me just tell you what those are. They are a little bit of netting out of pluses and minuses. Hold on. Let me just read them to you.

Force structure changes comprise adjustments to the Army, Navy, Air Force, and Marine Corps combat force structure in light of the new strategic requirements. The active duty forces of the Army, Navy, and Air Force are reduced by a total $17 billion. But there are increases to the Marine Corps of $2 billion and to the Guard and Reserve forces of $400 million.

So we are adding, over the baseline of the Bush base force, we are adding to the Marines and we are adding to the Guard and Reserve.

We get a $10 billion savings in O&M costs and other things related to the cost of the force structure cut. In other words, when you cut the force structure, you get a proportionate cut in the training and operations budget, too.

So the force structure is $24 billion. It is a net. It is $17 billion cut, $10 billion infrastructure cut, which is a $27 billion cut. But we are adding $2 billion for the Marine Corps and $400 million for the Guard and Reserve.

Senator STEVENS. Mr. Secretary.

Secretary ASPIN. Sir.

BASE CLOSURE

Senator STEVENS. I was told in the first base closure round we closed one out of eight bases. In the second one, we closed one out of four. And if we follow your force structure option in the next one in 1995, we will be closing one out of two bases. Is that right?

Secretary ASPIN. That could be. I tell you, we do not have a base structure commission yet, and we have not started to go through that yet. But I would say that it looks to me like the 1995 base closure list is going to be the biggest one of all. I do not know whether it is going to be one out of two or what, but it is going to be bigger than the 1993, Ted, I think.

Senator STEVENS. But it is because the emphasis is on forward deployment under your system.

Secretary ASPIN. Yes, sir.

Senator STEVENS. And you will close very few overseas but mostly at home.

Secretary ASPIN. No; we are closing overseas bases more than we have at home. Yes; the force structure in Europe, for example, is going from 320,000 to 100,000. That is down to one-third. And that is a bigger cut than there is proportionately in the United States. The force structure in Europe will be one-third what it was before. The force structure in the United States will be—I would have to look it up, but it is not cut one-third.

The other parts, as I point out, is the modernization and investment programs. The biggest savings is in the SDI, but there is another $32 billion worth of savings in some of the other programs. The new initiatives is a plus. We are adding money there because of the new initiatives. And the foundation is minus $19 billion. That is a $19 billion cut in the kind of overhead account, et cetera, from as best we can see.

It totals up to a $91 billion cut over 5 years in the defense budget.

Senator BUMPERS. What percentage of this budget is going to be for manpower?

Secretary ASPIN. What percentage at the end?

Senator BUMPERS. Yes.

Secretary ASPIN. Do we have that?

By 1999, Senator?

Senator BUMPERS. Just an approximation.

Secretary ASPIN. We will get back to you on that, sir.

Senator BUMPERS. OK.

[The information follows:]

The combination of both the force structure and infrastructure reductions results in about 160,000 military manpower reduction.

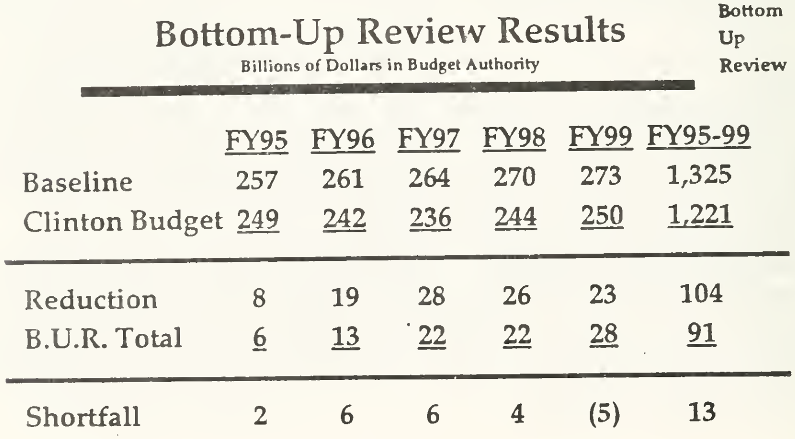
Taking into account the effect of pay raises over the five year period including the 2.2 percent currently under consideration it appears that about 29 percent of the fiscal year 1999 budget will be for manpower.

If you just compare percentages, this is not much different from the FY 1994 Clinton budget of 28 percent. However, one must remember that the FY 1999 estimate supports about 160,000 fewer personnel and reflects the impact of pay raises. Also, I previously indicated that relative to the OMB reduction of $104 billion there is still a shortfall of $13 billion to meet the OMB target. So, manpower levels could be further revised as we identify the program reductions that have to be made to live within the fiscal guidance.

Senator INOUYE. Let us give the Secretary an opportunity to finish his statement, and we will have just about 30 minutes for the rest of us to ask questions.

Secretary ASPIN. Let me just compare this. Senator Domenici, let me just compare this, because this is what you and I used to do when we were on the Budget Committees. What this compares, the $91 billion cut, over 5 years, where does this compare to what OMB Director Panetta wanted us to do with respect to the President's presentation made on the budget back in February?

I mean we were told to do a bottom-up review of defense spending here and then look at the numbers afterward. But, in the meantime, of course, you had to have an estimate of what defense was going to be over 5 years, because you had to have something in the budget for defense when the President laid out his economic program and what he was going to do to close the deficit over 5 years.



Bottom Up Review

Bottom-Up Review Results

Billions of Dollars in Budget Authority

	FY95	FY96	FY97	FY98	FY99	FY95-99
Baseline	257	261	264	270	273	1,325
Clinton Budget	249	242	236	244	250	1,221
Reduction	8	19	28	26	23	104
B.U.R. Total	6	13	22	22	28	91
Shortfall	2	6	6	4	(5)	13

FIVE-YEAR BUDGET PROJECTIONS

So let me compare this with where we are in the budget thing that Director Panetta came up with, with the Clinton budget.

The baseline there is the George Bush baseline, adjusted for inflation, adjusted for the pay things, adjusted for the Odeen Panel. It is essentially, with gross economic adjustments, that baseline is the George Bush base force baseline. The Clinton budget is where OMB Director Leon Panetta came up with in this relevant period of 1995 to 1999. And what that shows is a reduction is needed and how much we got with the bottom-up review, and what the difference is.

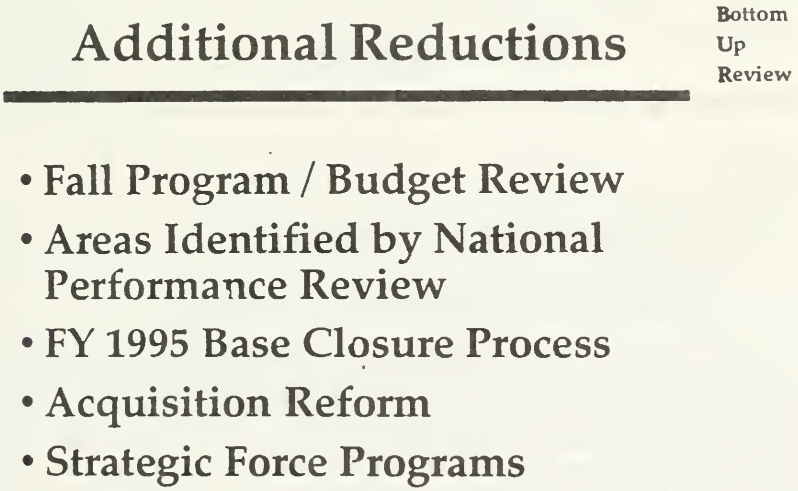
What it is, is it shows it is pretty close. It comes out very, very close to what the OMB requirements were.

We come out being short $13 billion over the 5 years. And it breaks out to $2 billion the first year, $6 billion the second, $6 billion the third, $4 billion the fourth, and actually being ahead of the game on the fifth year.

So that is what we did when we found out when we just added up the numbers from the bottom-up review and compared them to the numbers that we got from OMB. And that is where it comes out.

Let me just say there that that means we can make it. This is not a hard fit to make this work.

Let me give you some examples.



Additional Reductions

Bottom
Up
Review

- Fall Program / Budget Review
- Areas Identified by National Performance Review
- FY 1995 Base Closure Process
- Acquisition Reform
- Strategic Force Programs

These are the additional reductions. There are a few things that we have to go through yet which we will presumably get some more savings from. One is the fall program, the annual budget review. It is not unusual for you to get a 1-percent reduction when you go through the budget scrub. And $2 billion is—you know, 1 percent is like $2.5 billion here. So anything that you have in the 1-percent range of a budget scrub, we would receive some of that $13 billion every year in the fall program budget review.

Al Gore has identified areas identified by the "National Performance Review." We will have some savings from the "National Performance Review" as we institute it and we will get some savings from that.

We have the matter that Ted Stevens just raised, the 1995 base closure process. We will receive $4 billion from the 1993 base closure, so there is 4 billion dollars' worth of savings there.

By 1995, we will get another round of base closures. And we probably will not see much of that savings before 1998 or 1999, but we will get some savings, and it is going to be a substantial base closure savings. We will get more.

We have got a big agenda on acquisition reform which we will be back to you about some time before the end of the year, and we ought to be able to get some savings out of acquisition reform.

And, finally, we are doing a large review of the strategic force programs. All of which means that I have been able to, today, write a letter to OMB Director Panetta and said we will make—under the bottom-up review, plus the additional reductions that we can see here, we can pledge to you that we can make those numbers, the $104 billion over there. We are now at $91 billion. We told him we will get him the $104 billion. And we will come up with the numbers and make his targets and make the numbers that he had in his budget in February.

So we have written him a letter, mailed today, to tell him that we can reach his targets.

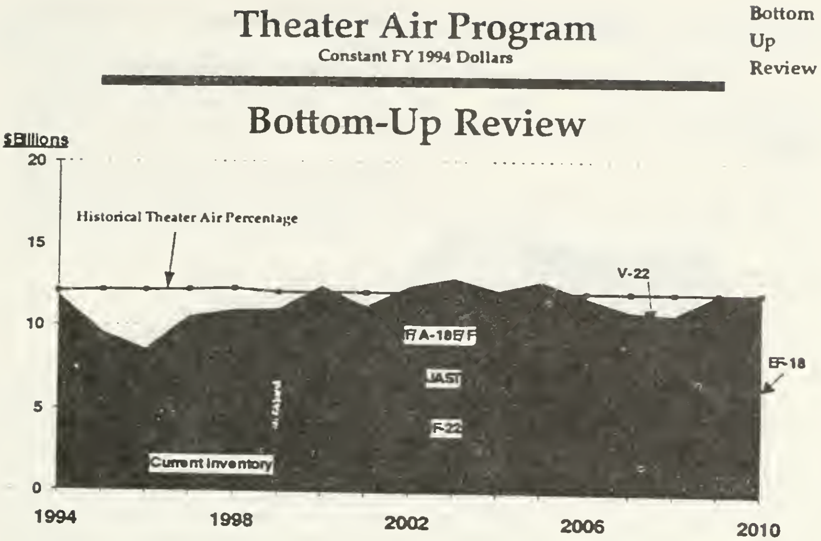
Bow Wave

**Bottom
Up
Review**

- Theater Air Programs
- Ballistic Missile Defense

OK, let us talk about the bow wave a little bit, because this was an issue that came up, and that was the question of whether we would get bow waves from—get the effect of a bow wave, you know, with the procurement, sometimes it just—you remember, we would end up with just postponing the expenditures, and then you would suddenly have a big bulge at the end and sort of, well, that is the next guy's problem.

What we wanted to do here was to make sure that we did not have a bow wave and we were not leaving our successors with a big problem to solve. And so I wanted to talk to you about two areas where the bow wave has existed in the past heavily—the theater air programs and the ballistic missile defense. I only pick these two, but you can pick any one. We want to assure you that we do not have a bow wave problem with this program.



This is the difference between the theater air program under the base force and under the bottom-up review. You see under the base force you have the programs that were coming in—we were going to hit a bow wave big time about the year 2000. It was just going to take off if we went ahead with all those programs.

What we had in the program was a program that would fit in the short term, but would be a big bulge after the year 2000. We just had too many programs in there.

So that would have been a tremendous bow wave problem under the old scheme.

In the bottom-up review we have a little problem, but not a big one, a manageable problem. You see the programs that are different. We have dropped off the A/F–X and the multirole fighter. We have in the bottom-up review added in the V–22. It is our intention, if possible, to buy that plane. And there has not been a decision on that because we have a Defense Acquisition Board process looking at it. But we put it in to be honest, because we do expect and hope to be able to buy that aircraft.

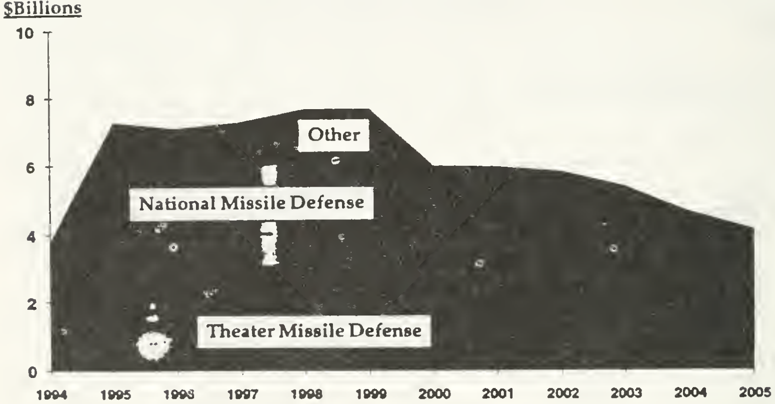
So our program is on the left; the base force program is on the right. No big bulge program—bow wave problem under ours.

Ballistic Missile Defense

Constant FY 1994 Dollars

Bottom
Up
Review

Base Force

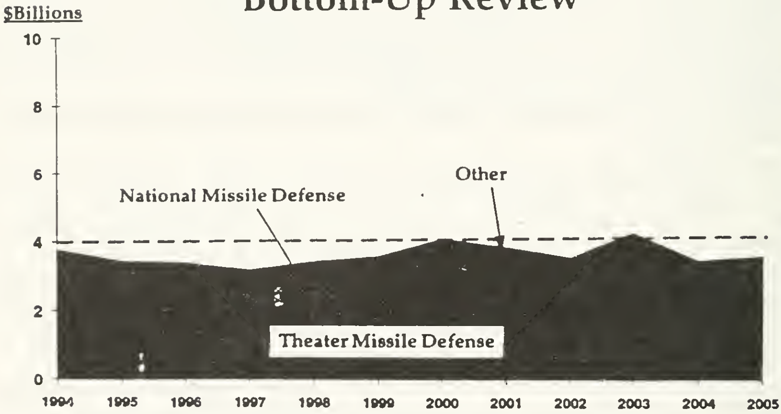


Ballistic Missile Defense

Constant FY 1994 Dollars

Bottom
Up
Review

Bottom-Up Review



RESTRUCTURING BALLISTIC MISSILE DEFENSE

The next two we just want to talk to you a little bit about the ballistic missile defense, the base force. Again, in the bottom-up review, we are looking at about a $4 billion program, which is kind of the top, on an annual basis. This one, Senator, would be about a $3 billion program here in the short run. We are going between 1995, 1996, 1997, 1998, that is about the $3 billion range, the $18 billion over the 3 years.

It does—if you look beyond that it creeps up to about $3 billion in the year 2000 and then creeps back up to $4 billion again in the year 2003, but those are—this is under the program as anticipated here.

Senator BUMPERS. Is there any more?

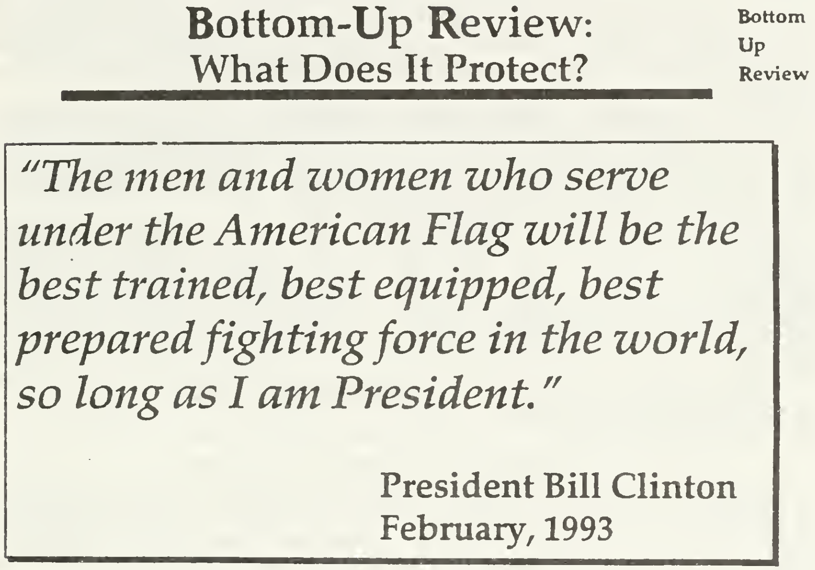
Secretary ASPIN. No; that is it.

Senator BUMPERS. How about the most important thing on the charts?

Secretary ASPIN. What is that?

Senator BUMPERS. The statement of our fearless President.

Secretary ASPIN. Absolutely.



Bottom-Up Review:
What Does It Protect?

Bottom
Up
Review

"The men and women who serve under the American Flag will be the best trained, best equipped, best prepared fighting force in the world, so long as I am President."

President Bill Clinton
February, 1993

PROTECTING THE BEST FIGHTING FORCE

What we have got here is essentially what we tried to do here, and we take this very very seriously, is the commitment. And I know both Senator Stevens and Senator Inouye have mentioned this. It is the business about having forces ready to fight. Having trained forces, the commitment to people that they will be the best trained, that our forces will be the best trained and the best equipped and the best fighting force in the world. And we take that very very seriously and we really are very very interested in doing everything we can to make sure that that happens.

Senators, thank you very much for allowing me to come over and make the presentation. It is looking a little bit beyond your markup, but I thought it was important for you to know what we were thinking of where we are going, and that we work together on this issue in the future.

Thank you very much.

[The statement follows:]

STATEMENT OF HON. LES ASPIN

Mr. Chairman, members of the committee, it is a pleasure to be here as you prepare your final recommendations on President Clinton's fiscal year (FY) 1994 defense budget.

At the outset let me express my appreciation to this committee and the other defense panels for your work on our budget. From all I have seen, the decisions emerging from the Congress will provide strong support for America's armed forces. To help your efforts and provide some context for them, today I want to highlight our recently completed Bottom-Up Review of Defense Needs and Programs, and then summarize some concerns regarding the FY 1994 defense bills now nearing completion.

BOTTOM-UP REVIEW

The Bottom-Up Review is the vehicle by which my department will fulfill Bill Clinton's pledge to "restructure our military forces for a new era." The Review focused on the new dangers and opportunities of this post-Cold War world, something not done heretofore. It developed new military strategies and plans to carry out these strategies through decisions on force structure, weapons modernization, and new defense initiatives. The review was a highly collaborative effort, which forged and benefited from a strong working relationship between our civilian and military communities.

The review identified the force structure required to maintain the capabilities to deal with two major regional contingencies nearly simultaneously. In that force structure, the Army will have 10 active divisions and 15 reserve brigades, the Navy will maintain 11 carrier battle groups and one reserve carrier, the Marine Corps will have five active brigades and one reserve division, and the Air Force will retain 13 active duty and seven reserve fighter wings.

To ensure that these smaller forces can deal successfully with major regional contingencies, we need various capability enhancements such as additional prepositioned equipment, more airlift and sealift, improved anti-armor and precision-guided munitions, and improved Army National Guard combat brigade readiness. To deter regional aggression, America will continue its overseas presence, and retain its commitments to peacekeeping and other military operations likely in this new era.

I would be happy to address your questions on any of the major conclusions from our review, but in this statement I will concentrate on the budget impact of the review's major decisions.

BUDGET IMPACT OF THE BOTTOM-UP REVIEW

The defense program derived from the Bottom-Up Review (BUR) was based on our assessment of the dangers we face in the new era and on our strategy for meeting those threats. At the conclusion of the review, we of course estimated what this program would cost and matched that against the President's direction for reductions.

To establish a baseline for this cost comparison, we began with the Bush defense program and adjusted it to reflect updated economic assumptions, the government-wide federal pay reduction and the findings of the Odeen Panel, which I formed to determine if the Bush Administration's defense program had been properly costed. That resulted in a baseline total of $1,325 billion for the period of the FY 1995–99 Future Years Defense Program (FYDP). The Clinton Administration defense budget target for FY 1995–99 is $1,221 billion; this was based on the President's April 1993 budget, adjusted to reflect the Odeen findings. The difference between the baseline and the fiscal target for the FYDP years is $104 billion.

Bottom-Up Review decisions will result in changes to the defense program that will net a reduction of $91 billion from the baseline. That leaves us needing to find an added $13 billion to meet our budget targets as we make our program and budget decisions this fall. In a letter this week I assured the OMB Director that we will achieve the reduction target as we prepare the FY 1995 budget and FY 1995–99 FYDP.

Bottom-Up Review decisions fall into four groups:

Force structure.—These decisions reduce our FY 1995–99 budget requirements by a net $24 billion. These decisions include adjustments to active and reserve force structure, savings for infrastructure related to these adjustments, and increases needed to achieve our department's environmental goals.

Infrastructure.—Separate from infrastructure changes derived from force structure adjustments, opportunities for savings and efficiency were found within DOD support activities themselves. Examples include cuts in headquarters and civilian personnel levels, and savings from the proposals of the 1993 base closure commission. We estimate these infrastructure savings at $19 billion.

Modernization and investment programs.—Within this broad category, the biggest FY 1995–99 savings will be $21 billion from a realigned ballistic missile defense program. Other modernization and investment decisions will save another $32 billion. This is the net result of reduced development and procurement of certain combat systems (aircraft carriers, space launch, tactical aircraft, communications satellites, intelligence and other programs); added investment for combat helicopters, attack submarines, and the V–22 Osprey aircraft; and our new Defense Reinvestment program, which will emphasize dual-use technologies, assist DOD personnel affected by defense restructuring, and help communities adjust to closure of nearby defense facilities.

Initiatives.—The BUR determined that $5 billion could be prudently added over FY 1995–99 for new initiatives including cooperative threat reduction, counterproliferation efforts, expanded contacts and cooperation with the states of the former Soviet Union, global initiatives to promote democracy, peacekeeping and peace enforcement, and humanitarian assistance.

This is how we arrived at the BUR net savings of $91 billion, which would leave us $13 billion below the target reduction of $104 billion. This difference is spread across the first four years of the FYDP.

It is important to note that these BUR figures are just planning estimates. The review developed a strategic framework, not a budget. On the other hand, BUR decisions certainly will guide DOD's program and budget review this fall and will be reflected fully in our FY 1995 DOD budget request and the FY 1995–99 FYDP, which will be consistent with the Administration's budget guidance.

In addition to tracking the impact of its recommendations across the FYDP, we remained mindful of the consequences of the Bottom-Up Review's decisions for defense spending in the year 2000 and beyond. The review was focused particularly on preventing its decisions from producing large "bills" that would have to be paid in future defense budgets. In most cases, our analysis demonstrated that sizing DOD properly now would prevent "bow-wave" funding problems from developing later. For example, we scaled back the program to develop new combat aircraft to eliminate a looming bow wave. The previous administration supported more theater aircraft programs than could have been afforded when they would have entered service next decade. We fixed this without jeopardizing our future aircraft superiority, while at the same time including full funding for the V–22 Osprey.

Another bow-wave example is the ballistic missile defense (BMD) program. The previous administration's global defense system would have saddled DOD with very large acquisition costs both in this decade and the next. Our redirected BMD program will provide a robust theater missile defense capability at a savings of about $21 billion in FY 1995–99, and will save another two or three billion dollars per year in the next decade.

We are confident that our Bottom-Up Review decisions are fiscally sound both during the FYDP and in the years beyond.

FY 1994 DEFENSE BUDGET CONCERNS

The Bottom-Up Review highlights the importance of wise decisions in the FY 1994 defense budget. Congress' final deliberations, I hope, will benefit from seeing the future that the BUR has projected. I urge you to try to ensure that this year's budget will provide the best possible foundation for our FYDP. In that regard let me share some concerns regarding congressional decisions on the FY 1994 defense budget.

Congressional support for preserving force readiness fortunately remains high, but I am concerned about several developments that could be detrimental to readiness. First are proposed cuts to our request for Operation and Maintenance (O&M) accounts, cuts that are assumed to be restorable with cash transfers from the Defense Business Operations Fund (DBOF). It is not prudent to rely on DBOF for cash transfers in excess of what is already planned; DBOF cannot be counted on to remedy the proposed cuts in O&M, leaving readiness vulnerable. A related threat to readiness is the call to replace DBOF itself. Proposed replacements have not been thoroughly investigated and would jeopardize our ability to ensure sound financial management, in support of high force readiness. This Administration is committed to improving financial management throughout the department, and so I urge Congress to give my leadership team a chance to correct DBOF shortcomings. Other concerns include proposals for fencing OPTEMPO and training funds, which would hinder us in directing money where it is most needed, and deep O&M cuts for information technology programs. Finally, the material readiness of our forces would be hurt by cuts or restrictions affecting purchases of spare parts and other essential supplies.

Another concern is the possible lack of legislative approval of the Administration's Global Cooperative Initiatives, which would make it harder for DOD to fund these important mission areas without diminishing force readiness. Protecting U.S. global interests also would be hindered by substantial cuts to our request for intelligence programs.

Preserving the technological superiority of U.S. forces would be hurt by funding cuts in key investment programs such as the B–1 and B–2 bombers, Bradley Base Sustainment, Defense Satellite Communication System, EP–3/RC–135 modifications, F/A–18 C/D, chemical-biological defense, and various communications and space-based surveillance programs.

It is now more important than ever for the Congress to reject provisions that would encumber DOD flexibility and management, e.g. restrictions on Defense Department use of private contractors, new reporting requirements, and procurement or contracting provisions that would make acquisition much more difficult.

Finally, adequate support for our most pressing defense needs is threatened by unrequested funding, be it for hardware, personnel, or military construction. We need every defense dollar to go toward meeting the validated requirements in our FY 1994 budget request.

As you and your colleagues move toward final defense budget decisions, I urge careful consideration of the above concerns regarding fiscal year 1994 programs. I also ask you to take account of the important decisions included in our comprehensive and far-reaching Bottom-Up Review.

Senator INOUYE. Thank you very much, Mr. Secretary, for your comprehensive report. However, it gives us about 30 minutes of questioning so I would like to advise all to limit ourselves to 5 minutes.

I have many questions I would like to submit to you and your office for responses.

Secretary ASPIN. Thank you.

U.S. BUDGET SUPPORT FOR MIDDLE EAST PEACE

Senator INOUYE. Yesterday was an extraordinary day. As a result, reporters have been coming up to us and question No. 1 is, How much will it cost. Question No. 2, How much of that will come out of Defense. Obviously, we do not have the answers, but my question to you, sir, is will yesterday's historic moment have any impact upon your budget?

Secretary ASPIN. I think it is a little early to say yet, Senator. I think we need to fully sense where this thing is going, where the settlement is going, what kind of moneys they are going to need for it, where they are going to come from. How much will, first of all, come from the United States, how much will we be asked to contribute. And then within the United States, how much Defense might contribute.

I think you have a very important and interesting question. I just do not think we can say anything very intelligent about it. It is too soon.

Senator INOUYE. We should anticipate something coming out of Defense.

Secretary ASPIN. Possibly.

NONREADINESS O&M SPENDING

Senator INOUYE. As we did in everything: Somalia, Defense; Russian aid, Defense.

Second, in your presentation you spoke of defense spending coming down, but I note that in one area for the last 5 years it has gone up. These are the nonreadiness types of money that come out of O&M: environmental cleanup, drug interdiction, et cetera, et cetera. Now, I gather this trend is continuing. It has doubled in the last 5 years. In other words, O&M is coming down but nonreadiness is going up. Is that the trend we can anticipate?

Secretary ASPIN. I hope not. I think some of the nonreadiness O&M is going up for reasons nothing to do with anything other than kind of cyclical reasons. The environmental cleanup is particularly heavy right now, but it is because we have a lot of base closures on the way. I think that could possibly level off.

The Clinton administration is seriously looking at the drug program and assessing the question about what we should do in the long run on the drug program and whether we are getting the best use of the assets that we have deployed on that problem.

O&M, as the Senator knows, is a big catchall phrase that covers readiness, but there is a lot of things in it and some of it is just pure infrastructure and overhead. It is, of course, where the money goes to maintain the base structure and anything we can do to close bases is very helpful in freeing up O&M money. So it is a conglomerate of a lot of those kind of issues and we are very concerned about the same kind of things that you are.

I take it from your comments that you are worried about the readiness O&M getting squeezed.

Senator INOUYE. That is right, sir.

Secretary ASPIN. That is our worry too; yes, sir.

EFFECT OF FISCAL YEAR 1994 MILITARY PAY RAISE

Senator INOUYE. Finally, while your budget is going down I assume that you intend to have a pay freeze throughout the next 5 years?

Secretary ASPIN. The plan is a COLA minus one. This year is a freeze and the next 4 years is COLA minus one.

Senator INOUYE. What about pay raises.

Secretary ASPIN. We would recommend pay raises in the order to get us about 1 percent below inflation.

Senator INOUYE. I think it would be safe to assume that the Congress of the United States will continue its pay raise for personnel, so your budget may not be realistic.

Secretary ASPIN. I realize that. Are you going to do 2.2 percent, Senator?

Senator INOUYE. Yes, sir.

Secretary ASPIN. 2.2 percent for this year, for 1994, the same as everybody else.

HOW TO HANDLE FISCAL YEAR 1994 OUTLAY PROBLEM

Senator INOUYE. Senator Stevens.

Senator STEVENS. I have asked questions, but let me ask in line with what the chairman has just said. We have a $3 billion-plus shortfall. Now this is your last time before us, our good friend. Where would you suggest we apply that? That is before we compute the impact of the negative bow wave of transferring the outlays that we transferred yesterday. So we may not have outlays for the budget minus $3 billion. I think it is somewhere around $8 billion in outlays.

Secretary ASPIN. That you are short.

Senator STEVENS. We are short.

Secretary ASPIN. OK.

Senator STEVENS. Russia, Somalia, Bosnia, the whole thing is taking dollars to spend out now. So that we have an outlay bow wave. I do not know how bad it is negativewise, but it is pretty bad.

Secretary ASPIN. Let me take a look at it and get you a serious answer to that question. Because I would hate to do this off the top of my head.

Senator STEVENS. I would hate to second guess you. I think you have done a good job. We want to work with you and I would urge you to give us that.

[The information follows:]

The Congressional Budget Office (CBO) believes the outlays associated with the fiscal year 1994 defense budget request are approximately $2 billion higher than the Administration's estimate. The $2 billion reflect three primary elements in dispute between the Administration and CBO. First, DOD projected cash receipts in the DBOF of sufficient magnitude to permit $3 billion transfer from the DBOF to the Service O&M accounts. CBO claims there will only be sufficient receipts to transfer $1.5 billion. Even if the CBO projection were correct, the outlays from the O&M accounts in the President's budget should be reduced to reflect the $1.5 billion transfer from DBOF to O&M vice the $3 billion transfer. CBO has not been able to explain this inconsistency. Second, after CBO and DOD negotiated the savings associated with the civilian pay freeze, CBO reversed itself and refused to score the full outlay savings that came from eliminating the pay raise. Third, DOD allocated $1.3 billion in the budget as the cost of capitalizing the Defense Contract Management Command and the Defense Contract Audit Agency. Although both Armed Services committees have rejected the introduction of DCMC and DCAA into DBOF, CBO has decided there are no outlay savings from this budget action. The net result of these actions is to potentially force the Congress to cut $2 billion in outlays from the defense budget request because CBO has reversed its own scoring positions.

Since the FY 1994 Defense budget was submitted to the Congress, there have been several other developments that would add to the outlay problem. First, the Congress has refused to go along with the pay freeze. A 2.2% military pay raise would add about $1 billion to FY 1994 outlays. Second, CBO has estimated that spending in FY 1994 from the FY 1993 Aid-to-Russia supplemental would be about $200 million. Therefore, the total outlay problem is about $3.2 billion and not around $8 billion as suggested. It is possible that the $6–8 billion figure derives from the DOD estimate of the budget authority reduction required to meet the $2–3 billion cut in outlays.

With the above information as background, what suggestions can I give to the Committee for dealing with the shortfall? First of all, I recommend that the Chairman of this Committee and Chairman of the HAC-Defense subcommittee call on the Chairman of the House and Senate Budget Committees to ask CBO to revisit and explain the scoring differences. I would also ask the Committee to support readiness and provide the Department maximum flexibility in executing the program through increased transfer authority; no earmarking of funds; provision of all the FY 1994 budget authority allowed under the Budget Resolution; and if the budget authority/outlays mismatch will not permit full funding of the President's request, application of the residual budget authority toward programs approved in the Bottom-Up Review.

DEPLOYMENTS AND LANDING RIGHTS

Senator STEVENS. Second, it seems to me your bottom-up review—and I am going to get a little provincial on you, but it does make a difference what your deployment strategy is if that system is going to work.

Secretary ASPIN. Yes.

Senator STEVENS. Whether it is Alaska or landing rights in Singapore or landing rights somewhere in the Persian Gulf area, to the extent that you have deployment schedules that are cost saving and allow dual deployment options, you can get by with that lower force structure. A unit stationed in Alaska can go to Asia or it can go to Northern Europe. It takes two units if you put them in what we call the South 48.

To the same extent, if you have landing rights in Singapore you would need one less carrier in the Pacific in the event of two crises at the same time.

Secretary ASPIN. Yes.

Senator STEVENS. Now, have you outlined the deployment options yet to back up the bottom-up review?

Secretary ASPIN. No; but I think we are looking at the kind of deployment options that are consistent—that are in place right now. We may be able, as you suggest, to get more out of the forces that we have in the "Bottom-Up Review" if we do make some adjustments on the deployment order.

U.S. EUROPEAN TROOP STRENGTH

Senator STEVENS. All right. Then finally, what I am worried about is that inflexible 100,000 troops in NATO. I have been a firm supporter of NATO. I think most of this committee has. But NATO now includes the Warsaw Pact as advisers and I guess now as almost members, that the threat to the United States in Europe is much less than the threat in the Persian Gulf or in the Pacific or even down around India. Are we locked into 100,000 for NATO no matter what?

Secretary ASPIN. I would not say that, but I think for the foreseeable future. Let me make the case, Senator, why the 100,000 is related to the concerns about the Persian Gulf, for example. If somebody asked me why do we want troops in Europe now, I think that you get a couple of things out of troops in Europe. One is you get them very much closer to a deployment in the Persian Gulf. I mean, after all, it was the 7th Corps coming out of Europe that was the backbone of the ground attack in the Persian Gulf.

Senator STEVENS. But we still had more than 100,000 troops there when we did that.

Secretary ASPIN. You did. But you could at least get—you are going to have two divisions there, at least the forward brigades, two brigades in each of two divisions under the 100,000 concept. So you have a fairly significant capability that would be closer to our deployment in the Persian Gulf in Europe than they would be if they were in the United States.

The second thing that a European deployment gives you is the ability to operate with NATO forces. I was really stunned. I guess I never really appreciated that until I saw what happened in Desert Storm. The number of planes that was operating in Desert Storm was a staggeringly high number of planes, and they were all going at all hours of the day and the night and no accidents. And they would do combined runs and they worked well together.

All of that came through years and years and years of training and running exercises in NATO. We planned to fight the air war in NATO, which never happened, but you transferred all of those skills to the Persian Gulf. And so the planes of the allies all worked together in terms of operating in the Persian Gulf. And it was pretty important in preventing accidents, in making the air forces as effective as they were.

So I think that is another reason why the argument for keeping those forces in Europe is important. Not that I think we are going to be fighting in Europe; it is hard to put together a scenario for that. But training in Europe allows us, when we transport to another part of the world, to work with the allies.

Senator STEVENS. But you cannot move them without the consent of NATO.

Secretary ASPIN. Yes.

Senator INOUYE. Mr. Secretary, on the 100,000 for Europe, that does not include the CINCLANT forces.

Secretary ASPIN. No, sir.

Senator INOUYE. In the 100,000 for the Pacific you include CINCPAC forces, is that correct?

Secretary ASPIN. Yes. You mean the forces in Japan and Korea, yes. Yes, you do. that is correct, they are under CINCPAC. The 100,000 is not under CINCLANT, you are right.

Senator INOUYE. Senator Domenici.

Senator DOMENICI. Mr. Secretary, first let me share Senator Stevens' general thoughts that clearly those of us who were concerned about building down too fast want to be supportive of a well-organized plan that we understand and will try to work together.

I have two concerns. First, as you know there is no longer any protection within the appropriations process for Defense budgets that you submit, even if they are your bottom line and even if they are commensurate with this rather substantial builddown that Leon Panetta prescribed for the President, that you are coming close to achieving. It is all mixed together.

I am very concerned, again—I guess until we finally get to the builddown in its finality, I will continue to be concerned about us not living by this budget once it gets up here. So I ask you, are you going to be supportive of these numbers as we move down the line, and do you know whether the President is going to be insistent that we not further substantially reduce Defense?

Secretary ASPIN. I believe he is. I heard him when we briefed the "Bottom-Up Review" at the White House before we presented it publicly, him saying that and saying how committed he was to make sure that we maintained the capability of the American military forces. And if we had a plan to have a force that was necessary to meet the kind of contingencies there, that he would fight for that budget.

Senator DOMENICI. Well he has indicated as much to me. Speaking about taking small items out in large numbers, it ends up adding up.

Secretary ASPIN. Yes; it does.

Senator DOMENICI. And that is occurring now.

Secretary ASPIN. It is a real concern. It is a real concern.

NEW DEFENSE MISSIONS

Senator DOMENICI. And let me ask a couple of things. Are there any new missions of the Defense Department that we might as well go ahead and admit we are going to pay out of the Defense budget? Is peacekeeping going to come out of Defense?

Secretary ASPIN. I think, you know, we have got a lot of possible other new peacekeeping needs, but I hope they do not get paid out of Defense. You know, there are lots of ways, as you know, Senator Domenici, to pay for these things and DOD is already bearing the expense of U.S. participation in several peace operations. And I would feel as you do, that if you keep nibbling away at the thing—I mean it is hard to argue that $200 million is going to break the bank here or be the straw that broke the camel's back, but if you keep adding a little bit here and a little bit there and a little bit somewhere else, it will have an impact, especially if we cannot find a way to reimburse the services for the incremental costs they incur in support of these operations.

Senator DOMENICI. Well, you are going to find your military leaders are going to have a very difficult time selling to their people the plans when they cannot plan.

Secretary ASPIN. Yes.

Senator DOMENICI. And you understand that better than most, and I hope you are pushing regularly that you need a little time. You do not need 6-month budgets. If anything, you need 2 years at a time.

Secretary ASPIN. Yes, sir.

ESTIMATING BASE CLOSURE SAVINGS

Senator DOMENICI. Having said that, there are two things besides peacekeeping that concern me, and I hope that, if you can and with the chairman's consent, you would submit for the record an analysis of how accurate we have been, or inaccurate, on our estimates of base closure savings. And if they are very inaccurate, which I am just going to assume they are, could you explain to the committee how you intend to make that better? You are very high on base closure savings. I am not—I am over time, but I am not very sanguine that they are going to occur in a 2 or 3 year timeframe.

Secretary ASPIN. That is for sure.

PRODUCING A 5-YEAR DEFENSE PLAN

Senator DOMENICI. I think we ought to know that. You are looking for bow waves. Here is a possible one in reverse.

My last concern has to do with timing. Are you going to be ready this time around to give us your budget for 1995 in January, and will it contain 5 years as required by law?

Secretary ASPIN. I can speak for Defense; yes, sir. I cannot speak for all. But, yes, on the Defense side, that is what we were doing with the "Bottom-Up Review." As you know, when there is a change of administrations it is always a difficult process because the budget is essentially put together by the outgoing administration, the new guys come and they would like to look at it. They can essentially deal with it at the margins, but not much.

And that is what we did. We had a budget that was pretty much the Bush budget and was treading water. I described it as a treading-water budget. I thought it was. That is not going to be the case this time. The 1995 budget and beyond are going to be—the "Bottom-Up Review" is what we did to determine where we are going, and you will see it track directly with the numbers we have presented to you here today.

Senator DOMENICI. Mr. Chairman, could he submit for the record for all of us——

Secretary ASPIN. The business about the cost of base closures, the savings on base closures.

Senator DOMENICI. The reliability of the estimates and what you will do to make them more reliable.

Secretary ASPIN. We will do that.

[The information follows:]

Initial base closure savings estimates are calculated by the Military Department and Defense Agencies after approval of recommendations for each round of closure. The savings estimates are reviewed by the DOD Comptroller, who makes appropriate savings adjustments to the Military Department and Defense Agency budgets, including the outyears. Hence, once identified, the savings are taken by the DOD Comptroller up-front. The initial budget and six year financial plan for BRAC 91 was submitted to Congress with the FY 1993 budget submission. As the base closure recommendations are implemented, changes to the savings estimates (increases as well as decreases) are noted and adjustments are made by the DOD Comptroller in the next budget submission to Congress.

The initial FY 1989–95 net budgeted savings for BRAC 88 was $995 million as submitted with the FY 1991 budget. The most recent estimate is $23 million. For BRAC 91, the initial FY 1992–97 net budgeted savings was $3.0 billion. The current estimate reflects a slight increase to $3.1 billion. No adjustments have been made to the BRAC 88 annual savings estimate of $700 million, or to the BRAC 91 annual savings estimate of $1.4 billion.

Budgeted savings are impacted by several factors that are sometimes difficult to predict. Our experience with Pease Air Force Base for instance showed us that we cannot always dispose of bases as quickly as originally expected. Hence, our cost estimates for operations and maintenance increased, and budgeted savings fell by a like amount. On the other hand, projected construction costs have decreased for a number of reasons, thereby increasing savings. In the past we have eliminated projects for which existing adequate facilities were found and saw reductions based on actual bids received and redesign efforts. In some cases construction requirements have been cancelled because subsequent base closure recommendations have eliminated the need for the planned facilities, or force drawdowns eliminated the need for construction or modernization of facilities.

The largest contributor to reduced savings from base closures has been the decrease in expected revenue from land sales. Parcels of land have been transferred without compensation to the Department, significantly reducing budgeted revenue and the concomitant savings. Fort Meade, Maryland, is a case in point. Section 126 of the Military Construction Appropriations Act for fiscal year 1991, Public Law 101–519, transferred 7,600 acres of this installation to the Department of Interior. This action alone reduced budgeted land sale proceeds and savings by $302 million. More recently, the no cost transfer of England Air Force Base, Louisiana, significantly reduced the Air Force's budgeted land sale proceeds and savings. The President's recently announced initiative to speed economic recovery in communities where bases will be closing has the potential to further reduce revenue from land sales and therefore budgeted savings.

Increases or decreases to budgeted savings represent adjustments to the costs and savings during implementation and not to the projected annual savings. I am confident that the annual savings realized for the 1988, 1991 and 1993 base closure recommendations will exceed $4 billion.

Senator DOMENICI. Thank you, Mr. Chairman.

Senator INOUYE. Senator Specter.

Senator SPECTER. Thank you, Mr. Chairman.

Mr. Secretary, because of the limited time permit me just to raise a series of subjects with you that you may want to comment about. And I will have four detailed questions to submit for the record now.

At the outset, I share the chairman's concern about rapid deployment and the availability of our forces around the world in the changed environment. And I see your chart which dramatizes it much more than I had really known, showing the decrease of carriers.

I would ask you to reconsider the plans for the nuclear carriers as opposed to the conventional carriers. As I know the figures, it is $6 billion for a nuclear carrier, although some people say it may be as low as $4.5 billion. They last 25 to 30 years, some say longer. A conventional carrier can be rehabilitated for $800 million, about one-sixteenth as much, and last 15 to 20 years, and I would just ask that you reconsider that.

In terms of defense conversion, I offered an amendment yesterday which was accepted, which would try to get better response by the Department of Defense on the cost of closing, just raised by Senator Domenici. And candidly, Mr. Secretary, it raises a question in my mind about the good faith of the estimators when the costs come in three, four, and more times as much as they have estimated. It looks very much as if they are seeking to find reasons to close bases, but when you get down to the hard facts, they just do not exist.

And we all want to be cooperative with you. We know we have to save money. But we need the facts. And I am still stung by the omission in 1991 of letters from Admiral Clayman and Admiral Heckman which said the Philadelphia Navy Yard should be kept open, although downsized, and I went to court early this year on the aviation supply office in northeast Philadelphia to get facts and figures on consolidation with the Ships Parts Control Center in Mechanicsberg to find out what was going on. And this issue of candor is just indispensable.

I see a colleague wants to hold up nominations because he was told that he could not land in Sarajevo but could land in Zagreb. I had not thought of holding up nominations and I do not want to do that, but we just have to know what is going on. If we have the facts and we make our arguments and you disagree with us, we will accept it. I will accept that. But we have got this very bitter litigation going on about the Philadelphia Navy Yard, and it really occurs because we were not told the truth. But if we are told the truth and we make our arguments and it is decided otherwise, we can learn to live with that and then move on to conversion.

I have already talked to you about conversion and our delegation is anxious to meet, and I talked to the mayor again this morning. I wanted to see if he had any questions for you. I did not know I would be limited to 5 minutes. And he says let us just sit down and do it.

And finally, I want to take up a question which concerns me, but I do not know all the facts, and I want the facts from you, and this relates to what has been said about General Shalikashvili. I have seen the President's statement that he is the grandson of a Russian general in the Czar's army and the son of a Georgian army officer, and in 1944—this is quoting President Clinton—when he was 8 years old his family fled in a cattle car westward to Germany in front of the Soviet advance.

Now, I do not count his father's views against him. I want to know what he thinks. I think it is appropriate to ask him on those substantive questions. And if he disagrees with his father, that is good enough for me. But I am very much concerned about what appeared to be representations by the Government that are really not true, if, in fact, as the newspapers have reported, and I do not know whether it is true or not.

I want an answer, and I have asked for an opportunity to meet with the General, about his father having been in the Nazi organized unit commanded by the Waffen SS, that those in the Waffen SS were precluded from immigrating to the United States but he was permitted to enter, the father was, and the family, because of a false affidavit by a relative in the United States.

But to read about being the son of a Georgian army officer, and the President says that is the Georgia over there in Russia, when if, in fact, it is Waffen SS, a question arises, the question I want to know is what does the General know about that and what efforts did he make to correct the record. Because if he is a party to deceit—and I do not know that he is, but if he is—then I think that is a disqualifier.

We have a lot of hard, tough work to do, and we have enormous respect for you, Secretary Les Aspin, for a lot of reasons. We want to work with you. But we just have to know what the facts are.

Secretary ASPIN. We will work with you to get the facts, Senator. I think we have an interest in all of the same issues that you do, and we certainly do not want to hide anything on the issues of the base closings and what the evidence is. I know you have been concerned about that for a long time.

Senator SPECTER. Thank you very much, Mr. Secretary. Thank you, Mr. Chairman.

[The information follows:]

Senator Specter is scheduled to meet with General Shalikashvili regarding his questions on Tuesday, 21 September 1993.

Senator INOUYE. Senator Bumpers.

TRIDENT D–5 MISSILES

Senator BUMPERS. Mr. Chairman, I just will pursue on one line of questioning with you. First of all, to lay the groundwork, when we negotiated the START Treaty—now, you did not talk about this—but when we negotiated the START II Treaty our negotiators negotiated on the proposition that our Trident submarines would carry the 24 missiles they are equipped for, and each missile rather than the 8 warheads we anticipated putting on them would carry 4 warheads, right?

Secretary ASPIN. Right.

Senator BUMPERS. Now, I want you to look at my charts.

THE NAVY DOESN'T NEED 133 TO 333 MORE TRIDENT II'S

CURRENT SLBM INVENTORY AND ON ORDER

415 C–4 TRIDENT I
235 D–5 TRIDENT II
650 TOTAL X 8 WARHEADS = 5,200

START II SLBM WARHEAD LIMIT = 1,750
EXCESS WARHEAD CAPACITY = 3,450

Here is one I know you are familiar with. We now have 5,200 warheads, these are the C–4's on the first 8 Tridents, these are the D–5's that we are planning to buy for the last 10. In any event, we have got to cut 3,450 warheads from our submarine fleet. Do you agree with this?

Secretary ASPIN. Yes.

Senator BUMPERS. I might say at this point that one of the things—nobody has ratified the START II Treaty yet.

Secretary ASPIN. Right.

Senator BUMPERS. And the hardliners in the Russian Parliament do not like it. And for once, they probably have a legitimate squawk. They are convinced, and I think they are right, that our negotiators want to go ahead and put 24 missiles on every Trident with four warheads so that we can upload to eight in case there was some kind of emergency and we wanted to. I will come back to that in just a moment.

OPTIONS TO REACH START I SLBM WARHEAD LIMIT

OPTION I (BUMPERS)

—PUT 12 MISSILES ON EACH SUB AND LEAVE 8 WARHEADS ON EACH MISSILE.
—18 SUBS X 12 MISSILES X 8 WARHEADS = 1728 WARHEADS

OPTION II (NAVY)

—LEAVE 24 MISSILES ON EACH SUB AND AND DOWNLOAD EACH MISSILE TO 4 WARHEADS
18 SUBS X 24 MISSILES X 4 WARHEADS = 1728 WARHEADS

We have two options. We can do what I would like to do, and that is put 12 missiles on each submarine with 8 warheads on each one, which will bring you to this figure—1,728 warheads—rather than do what the Navy wants to do, and that is put 24 missiles with 4 warheads.

Secretary ASPIN. Right.

Senator BUMPERS. If you do what the Navy wants, you are going to spend $10 billion more for missiles than I think is necessary.

SAVINGS OPTION I OVER OPTION II

($ BILLIONS)

"DETUBE" LAST 10 TRIDENT SUBS
CANCEL BUY OF 133 MISSILES (@ $45.7 MIL) = 6.1
ADD-BACK COST OF "DETUBING" (CBO) = –1.0
NET SAVINGS (FY 1994–99) = 5.1

SAVINGS FROM CANCELING BACKFIT OF FIRST EIGHT SUBS AND PURCHASE OF 200 MISSILES (FY 2000–2010) = 8.6–12.6
TOTAL SAVINGS (FY 94–10) = 13.7–17.7

And here are the savings. You are looking for $13 billion over the next 5 years. You can almost find it just in this one thing. Here are the things that we can do. If we detube our Trident submarines so that only 12 tubes are available to us, put concrete or whatever else, and incidentally, when it comes to verification under the

START II Treaty the Russians can say we do not believe your missiles have four warheads, we think they have eight and we will be there in 24 hours to check them out. And under the treaty we are obligated to let them do that.

Now, if we detubed these Tridents and limited it to 12 they would have the same rights, so verification is not a problem. Any time they say, "Well, we do not think you really filled up all the tubes on these subs," with 24 hours notice they come and look. In any event, if we detube we can cancel the purchase of 133 of the D–5, that is for the popularly known Trident II missile. They are $45 million each, and that ain't bean bag. You save $6.1 billion with that. The cost of detubing those submarines is $1 billion, so your net savings is $5.1 billion.

Right now, the Navy plans to retrofit the first eight Trident submarines and put Trident II missiles on them rather than extending the so-called C–4 or Trident I missile. If you cancel that, that saves $9.1 billion, and if you cancel the retrofit of the other—this is the 200 of the D–5's it would take us to retrofit the first eight submarines, and then you cancel the retrofit, that is $17.6 billion. Your offsets to detube and extend the life of the C–4 missiles both so that you do not have to put the Trident II on the first eight submarines costs $9 billion. You realize a net savings of $8.6 billion. Added to the $5.1 billion from above and you get possibly as much as $13.7 billion.

Now let me just make a point. Senator Nunn and I went at this for an hour last night, and he says—and incidentally, you have said—I do not know whether you wrote the letter or not—the President wrote to me and you wrote to Senator Nunn, as did Colin Powell and General Butler. Nobody said we lose anything militarily. We do not lose anything strategically by doing it the way I would suggest. But what the President has said—and I hope to have a personal conversation with him about this—we would have to renegotiate this treaty with the Russians and the Kazakhs and the Belarussians and the Ukrainians. I do not think that is a big deal.

Second, CBO says you might not even have to do that.

Incidentally, have you seen the CBO study on this subject?

Secretary ASPIN. I have not had a chance to read it yet. Yes, I know there is one.

Senator BUMPERS. It is a very fine comprehensive—it is not one night reading. It took me two or three nights to wade through it. But they say you might not even have to renegotiate the treaty, that the review commission that is set up under the START II Treaty, unless the Russians objected to it, they could handle it.

Senator Nunn says, "Well, they want something in return."

Well, so what?

He said, "They may want to do something on CFE. They are not happy with some of their equipment."

Well, I think you have a legitimate argument of saying let us keep it on the strategic issues. If you want to do something on CFE, that's separate.

Mr. Secretary, when it comes to this Compliance Review Commission, making changes, we use it extensively in the INF Treaty and it worked beautifully. And the United States and Russia solved every problem they had, including—incidentally, one other problem is they are going to put concrete in their SS–18 silos and then put a smaller missile in it. So using concrete to detube and to do what they want to do in the silos is not unheard of.

I submit to you that Yeltsin would not object to this. It would please hardliners who do not like the START II Treaty, and this is one of the reasons they do not. We save $10 billion. That ain't beanbag. We still have 1,728 missiles, and you lose nothing.

Secretary ASPIN. Senator, I think, you know, one of the——

Senator BUMPERS. I meant 1,728 warheads.

Secretary ASPIN. We are, as we know, now that we have finished the "Bottom-Up Review," about to engage in a fairly major look at the strategic issues. And we will revisit this. I mean, we have watched with some interest your arguments and the debates that have been going on in the Senate on this issue, and we will take another look at it. Let me just leave it at that.

I have interest in your arguments and your questions. We did, I think, respond in a letter to Senator Nunn. You asked for a letter on that. But we will definitely look at it as part of the strategic review that we are undertaking.

Thank you, Senator.

Senator BUMPERS. Thank you, Mr. Chairman.

Senator INOUYE. Thank you.

Mr. Secretary, once again on behalf of the committee, I thank you very much. However, as you know, there are many unanswered questions and we will be submitting them. All members want to do that. Questions such as what divisions are going to be cut out. Little things like that.

The number of people pounding on our doors right now, they need some answers.

ADDITIONAL COMMITTEE QUESTIONS

[CLERK'S NOTE.—Additional questions submitted by subcommittee members, together with the Department's responses, will appear in the appendix portion of the hearings.]

NONDEPARTMENTAL WITNESSES

ADDITIONAL PREPARED STATEMENTS

Senator INOUYE. Due to time constrains, the subcommittee was unable to provide an opportunity for nondepartmental witnesses to present oral testimony. The subcommittee has received a number of prepared statements which, without objection, will be inserted in the hearing record at this point.

[The statements follow:]

STATEMENT OF NATIONAL RESEARCH CENTER FOR ENVIRONMENTAL LUNG DISEASE

Mr. Chairman and Members of the Subcommittee, I am Dr. Robert J. Mason, M.D., Chairman of the Department of Medicine and Program Coordinator for the National Research Center for Environmental Lung Disease at the National Jewish Center for Immunology and Respiratory Medicine, a non-sectarian, non-profit specialty medical center located in Denver, Colorado, which is widely recognized as the world leader in the study and treatment of lung disease and related disorders of the immune system.

Thank you for the opportunity to appear before you today to discuss the need for expanded support of research, clinical, and training programs and services in the field of environmental lung disease, specifically relevant to the medical mission of the Department of Defense.

The National Research Center for Environmental Lung Disease was established to accelerate medical research breakthroughs in the areas of respiratory medicine and immunology, particularly focused on the effects of environmental and occupational factors contributing to or causing lung cancer, emphysema, asthma, tuberculosis, berylliosis, silicosis, sarchoidosis, and other lung diseases. We are seeking to concentrate our research efforts and build upon our combined strengths in immunology, respiratory medicine, and occupational/environmental medicine to discover the reasons for the meteoric rise in deaths due to lung diseases and to ease and eventually end the human suffering caused by them.

Although environmental lung disease and other respiratory disorders affect military personnel in many of the same ways that they affect the general population (i.e. air-borne pollutants, smoking, etc.), these problems may become even more prevalent as our armed forces are called upon to serve in combat and peace-keeping missions in foreign lands, as well as in other roles within the U.S. (e.g. related to civil disorders, the homeless, refugees, and other immigrants). For example, tuberculosis, a disease that many thought had been eradicated in the U.S., is making a virulent comeback. The incidence and mortality rates of TB have been rising since the mid-1980's and this contagious killer disease has reached epidemic proportions in some developing countries and among certain population groups in the U.S., including Third World immigrants, the homeless, and AIDS patients. There have also been outbreaks in several prisons. Part of the alarming trend has been a significant increase in TB and similar infections that are resistant to normal drug therapy.

While lung cancer from cigarette smoking is still the number one cause of mortality from respiratory disease, environmental pollutants are increasingly being recognized and studied as major catalysts as well as possible primary causes. Military personnel have been exposed to severe air pollution from such sources as the oil field fires in Kuwait during the Persian Gulf War. In addition, lung diseases among veterans, including silicosis and sarcoidosis, may have been caused or exacerbated by the inhalation of military hazardous waste, mustard gas, and other defense-related toxins.

Although the Veterans Health Administration has little information about the effects of smoking and environmental agents on veterans afflicted with lung disease, veterans of the Persian Gulf War may be experiencing respiratory problems because of exposure to oil fire smoke, toxic gas and chemicals. More recently, there has been a concern about U.S. troops in Somalia and the possibility of their contracting forms of drug-resistant tuberculosis. Tuberculosis is a classic disease that has plagued service people since the Second World War when ship ventilation was the cause of the spread of disease. Entire VA hospitals were opened to treat the vast numbers of veterans returning with the infection.

The National Research Center for Environmental Lung Disease will be dedicated to the study of the specific relationship between pollutants and the rising rate of lung diseases. It will examine the extent to which both outside and indoor air pollution and occupational airborne hazards contribute to illness and what factors determine susceptibility.

Lung disease is currently the fourth leading cause of death in the United States and its prevalence is rising at a faster rate than any other major disease apart from AIDS. Last year, more than 85,000 Americans died from chronic obstructive pulmonary disease (or COPD) and a variety of interstitial and hypersensitivity lung diseases. These lung diseases afflict over 15 million Americans and cost the U.S. economy billions of dollars annually in direct health care expenditures and lost productivity. For example, the New England Journal of Medicine recently published statistics on the cost of asthma to the American economy. The direct costs such as inpatient/outpatient hospital care, prescription medications and emergency room totalled over $2 billion annually. However, the indirect costs are equally high and are tied to such things as: lost work to care for children with asthma ($900 million), lost work for adults with asthma ($346 million), and lost future earnings from premature death from asthma are estimated at almost $1 billion.

Lung cancer is the number one killer of both women and men. There will be about 170,000 deaths this year. To state it another way, during the first 100 days of the Clinton administration, the number of deaths due to lung cancer exceeded those during the entire war in Vietnam. Veterans who are or once were heavy smokers due to the free cigarettes that have traditionally been distributed to military personnel face serious health problems. The result of this is beginning to be seen in the numbers of veterans with COPD and lung cancer. It is known that the incidence of these diseases is higher for veterans than the general population.

The need for a better understanding of environmental airborne hazards has never been greater. Lung cancer, asthma, and COPD are all classified as environmental lung diseases. Although cigarettes appear to be the main cause of lung cancer and emphysema, 15% of lung cancer deaths are not attributable to active smoking and are attributed to other factors in the environment. Recent reports indicate that asthma deaths are on the rise and may be due to a worsening environment. In addition, it is possible that many respiratory illnesses may be caused by the fact that the air within certain office buildings is more polluted than outdoor air. Furthermore, in our modern technological society, new chemicals are introduced into the environment each year at an increasingly high rate. One of the missions for the new National Research Center on Environmental Lung Disease will be to provide scientific data on the relative risk and biologic plausibility of air toxins in order to set health safety standards in both civilian and military workplaces, including naval vessels.

Biology and health science have progressed rapidly in the last few years. We are now able to ask very specific questions on molecular mechanisms on how agents injure the lung. This allows for strategies for minimizing effect and potential treatment. Similarly, we can now study the genetics of individual susceptibility. 15% of cigarette smokers develop catastrophic lung diseases. The National Research Center on Environmental Lung Disease will endeavor to find out why some individuals are more susceptible to certain pollutants.

The new Center's research efforts will range broadly from studies of molecular biology and immunology to direct studies of air pollution on patients with lung disease. The research efforts will help identify which pollutants are most injurious to the lung and, therefore, which sources of pollution should be priority targets for clean-up programs. Research leading to medical breakthroughs in these areas will result not only in treatment for those already afflicted with occupationally and environmentally related disease but also in new standards that will yield a quality of life improvement.

With regard to military personnel, the findings of the National Research Center will be particularly helpful to the thousands of veterans in VA hospitals across the country that are afflicted with various respiratory disorders either as a direct result of combat experience or subsequent employment.

The location of an environmental lung disease research center in Denver is particularly appropriate, for there is evidence that adverse health effects resulting from pollution may appear earlier and be more severe at high altitude. In fact, a 1985 study by the Center of Health Statistics showed age-adjusted death rates for chronic lung disease far in excess of the national average in Denver, Albuquerque and Las Vegas -- all high altitude cities and all with historically high pollution levels.

As Americans and citizens from nations around the world are exposed to an ever-increasing number of pollutants and allergens in the workplace, at home, and in the general environment, there will be a greater toll on their respiratory systems, especially among those who are already suffering from, or are susceptible to, lung diseases. The new National Center will serve the dual purpose of providing care to those individuals while promoting research leading to better technologies for the treatment of lung disease.

The total cost for the facilities, equipment, and initial related support for the Center is approximately $25 million. We are committed to this project and will raise a significant proportion of that money to ensure its success. We are seeking a federal investment of $15 million to complete the Center.

Thank you.

STATEMENT OF THE ADVANCED NAVIGATION AND POSITIONING CORP.

Mr. Chairman, thank you for this opportunity to offer outside witness testimony for the record. My name is John Stoltz and I am the President of the Advanced Navigation and Positioning Corporation (ANPC) of Hood River, Oregon. We are a small high technology firm that is experienced in the design and development of advanced electronic systems for navigation, positioning and tactical avionics. ANPC has participated in the design and prototyping of the tactical avionics for the F–22 Advanced Tactical Fighter. In addition, we have a special interest in innovative high technology products designed specifically to improve the safety and utilization of aircraft in all weather conditions at airports and heliports.

The topic of my testimony is our Advanced Landing System (ALS), a low cost ILS equivalent precision landing system. This system, developed privately by ANPC, can be installed at any airport, field or site and interfaces with standard avionics onboard virtually all IFR equipped aircraft now in service to generate navigation and control inputs sufficient to guide a pilot to Category I precision approach minimums.

In FY 1993, this committee provided $1 million from within the "Research, Development, Test, and Evaluation, Defense Agencies" account to initiate military evaluations and development of a portable ALS system. We are seeking $1.75 million in FY 1994 for phase II of this program, to complete the development and to conduct an evaluation and test of a prototype military ALS system at a Federal location.

This technology has unique applications for military use (see attached document), and you should be aware that representatives of the Marine Corps HMX–1 Squadron based at Quantico, VA, technical representatives from special operations, and avionics engineering specialists from Wright Laboratories have expressed an interest in this system. It will provide a low cost, precision landing system providing optimal solutions for both fixed wing and helicopter use. Specifically, the ALS is easily portable, and is flexible and adaptable to different aircraft type and environment.

The refinement of the ALS will not only be of significant military interest but will also result in an enhanced capability with direct applications for civilian public safety users, including emergency medical, law enforcement, and fire fighting airborne units. Importantly, there is no technology available, or being developed, that will sufficiently meet these vital public safety uses.

As you are aware, the Administration has placed a great deal of emphasis on fostering multi-use technologies. We believe that ALS represents an excellent candidate system, an exciting new technology which can significantly improve both specialized and general aviation operations and safety.

In contrast to other ground-based, precision approach aids, the ALS equipment is easily installed and is not hindered by irregular terrain or obstructions. The equipment is designed to take advantage of local topography. ALS is amenable to temporary applications where a landing capability is needed at a remote site in a short amount of time, or for a short amount of time. Additionally, the system's software package provides a capability for tracking and control to prevent runway incursions and support enhanced safety for approaches to parallel runways.

Conference Report 102–1015, the report accompanying Public Law 102–396, the FY 1993 Department of Defense Appropriations Act, provided $1 million to initiate DOD evaluations and applications for an ALS. The Advanced Research Projects Agency (ARPA) is currently in the process of structuring the program. It is our anticipation that a military evaluation and need analysis will take place in the next few months and that requirements will be developed. Preliminary technical appraisals have already been conducted by ARPA evaluators. These are the initial steps toward the development of a military specific product.

In the FY 1994 Defense Appropriations bill, it is our goal to seek sufficient funds to complete the evaluation of this technology, to leverage technology developed by ARPA—refining the system—and conduct evaluations of advanced military applications. It is anticipated that in phase two ANPC, in conjunction with the DOD, will validate and develop a militarily useful ALS, incorporate advanced low cost manufacturing techniques, evaluate equipment and prepare for economic service procurement in future years. Therefore, we respectfully request the subcommittee's support for follow-on funding totaling $1.75.

You should also be aware that we are also working with members of the House and Senate Armed Services Committees to secure an authorization for research, development, test and evaluation funds in the FY 1994 Defense Authorization bill. Draft language has been submitted that would accommodate the goals set out in this testimony.

Mr. Chairman, I realize that you face difficult resource allocation decisions among the various competing needs within the jurisdiction of your bill. I believe that the $1.75 million being sought for the Advanced Landing System in FY 1994 will maximize air safety and the efficient operation of military fixed wing and helicopter aircraft. For your further information, I am submitting two additional sheets with this testimony which outline ALS "Special Military Pertinent Features" as well as a sheet listing "Future DARPA Development Efforts."

Thank you for this opportunity to submit testimony.

STATEMENT OF THE AIR FORCE SERGEANTS ASSOCIATION

Mister Chairman and distinguished committee members, thank you for the opportunity to present our views on behalf of the 167,000 members of the Air Force Sergeants Association (AFSA). Our members, active duty, retired and veteran enlisted personnel of the Air Force, Air National Guard and Air Force Reserve, are flabbergasted by the willingness of the Clinton administration and some members of Congress to penalize the brave men and women of the Armed Forces who sacrificed, bled and died, and whose efforts resulted in successes in the Cold War, Operation Desert Storm and Operation Restore Hope, to name just a few more recent accomplishments. Today, I will bypass the tendency to reiterate the reasons for our government's obligation to provide adequate compensation and benefits in spite of budgetary constraints, because you are already knowledgeable of those facts. We will limit our discussion to three topics that are major concerns to our members—compensation, health care and commissaries.

It is my hope that our comments may provide some assistance as you develop legislation that would appropriate the best level and mix of funds in order to maintain our national defense at the high levels that are required for the future of our country.

COMPENSATION

At a time when military pay is lagging 13 percent behind salaries of comparable civilian sector jobs, the proposal to provide a zero pay raise next year and reduced pay raises for years 1995 through 1998 is astonishingly irresponsible and appalling. The proposal would increase the comparability gap to 20 percent by 1998. President Clinton has asked for "shared sacrifice" to place our economy back on track. We support that philosophy. However, this is not shared sacrifice—it is an unfair burden to the military families who already sacrifice more than their fair share. They deserve a catch-up pay raise—not a pay freeze! The President also stated that he intended to spare families earning less than $30,000 per year. Yet, no consideration is given to the fact that three-quarters of all enlisted personnel earn less than $30,000 per year. To add insult to injury, thousands of our junior enlisted families fall below the nation's poverty line and must rely on food stamps to survive. It would be a crime to mistreat those dedicated American families by refusing them even a mediocre cost-of-living pay raise.

Military families experience many sacrifices—frequent moves and family separations while the service members experience harsh and dangerous conditions in locations around the world. Our military service people put their lives on the line for their country, and many have paid the ultimate sacrifice by giving life or limb while fighting for our rights and freedom. Because of the compounding effect, the projected FY 1994 pay freeze and subsequent pay limits would reduce pay throughout the entire career of each member. Each year that pay is not adjusted for inflation, purchasing power continues to erode and the level of real income declines for all service members. Naturally, this causes even more of our junior enlisted members and their families to fall below the poverty line. Additionally, because retired pay is based upon a percentage of active duty pay, the retired pay will be reduced for the lifetime of each member. Retired pay has historically been a major incentive for members to make the military their career. Therefore, these actions to permanently reduce the active duty pay and retirement benefits will have a major negative impact on recruiting and retention of quality people.

It is unacceptable to AFSA, and hopefully to each of you on this committee, that the superb men and women of the Uniformed Services are facing this issue. These people, who have made this United States of America the most respected and powerful country in the world, should not be forced to experience such an unfair burden. We urge you to not let that happen! As an alternative, we encourage Congress to take the lead in being the "conscience" of our government and pass legislation that will compensate our military personnel fairly for the tremendous value of their services and daily sacrifice.

In good conscience, we find it impossible to complete any discussion of compensation without expressing our adamant opposition to the proposed caps on COLAs for federal retirees under age 62. This action would be another example of the government's recurring and unfair perception that the military is an easy target for a deficit reduction source. Congress previously linked COLAs for military retirees with Social Security and Veterans Disability Compensation recipients. On the principle of fairness, we ask you to ensure that equitable treatment continues.

Relocation expenses are another source of sacrifice for our military families. To relieve the burden, the FY Defense Authorization Act (P.L. 102–484) temporarily extended the Temporary Lodging Expense (TLE) allowances from four to 10 days in certain areas. This positive action should be authorized and funded permanently.

When Congress restricted housing allowances in 1985, service members were to pay no more than 15 percent of housing costs out of their own pockets. Again, our government is defaulting on yet another obligation to military families, as shortfalls in the Basic Allowance for Quarters (BAQ) require members to pay 20 percent of their housing costs. Because the FY 1994 pay freeze and future reduction also affect allowances, our military families will be forced to sacrifice even more by having to pay an escalating share of housing costs. AFSA, with your help, must insist that funding is provided that will ensure the government meets its obligation to provide the required 85 percent of housing costs.

An equity issue unresolved for too long is concurrent receipt of VA disability compensation and military retired pay. Of all retirees who are authorized compensation to offset the negative income effects of a service-connected disability, only those who completed a military career must forfeit an equal amount of their retirement annuity. Congress expressed its disagreement with this unfair policy last year through the Defense Authorization Act (P.L. 102–484), which directed DOD to submit its proposal by April 1, 1993, on how to allow concurrent receipt for our military retirees. It appears that DOD has ignored that requirement, but we urge this committee to live up to Congress' decision made last year by ensuring funds are appropriated to correct this long-standing inequity, and by ensuring DOD complies with PL 102–484.

HEALTH CARE

Health care has always been regarded as the most important benefit, after pay, for our members. Mr. Chairman, AFSA is concerned that with the end of the Cold War and accelerated downsizing of the military services, the commitment to take care of our active, Guard, Reserve and retired military families is ebbing. We desperately need your help in fully funding the Military Health Services System (MHSS), including CHAMPUS, military treatment facilities, and sufficient manning for both medical and dental services, to meet all specific and implied promises to eligible beneficiaries of the MHSS.

In the Defense Authorization Act of FY 1993 (PL 102–484), Congress expressed its understanding of the responsibility of our government to provide health care to current and former military families when it said, "It is the sense of Congress that:

(1) Members and former members of the Uniformed Services, and their dependents and survivors, should have access to health care under the health care delivery system of the Uniformed Services, regardless of the age or health care status of the person seeking the health care;

(2) Such health care delivery system should include a comprehensive managed care plan;

(3) The comprehensive managed care plan should involve medical personnel of the Uniformed Services (including reserve component personnel), civilian health care professionals of the executive agency of such Uniformed Services, contract health care personnel, and the Medicare system;

(4) The Secretary of Defense, the Secretary of Health and Human Services, and the Secretary of Transportation should continue to provide active duty personnel of the Uniformed Services with free care in medical treatment facilities of the Uniformed Services and to provide the other personnel referred to in paragraph (1) with health care at reasonable cost to the recipient of the care; and

(5) The Secretaries referred to in paragraph (4) should examine additional health care options for the personnel referred to in paragraph (1), including, in the case of persons eligible for Medicare under title XVII of the Social Security Act, options providing for: (a) The reimbursement to the Department of Defense by the Secretary of Health and Human Services for health care services provided such personnel at medical treatment facilities of the Department of Defense; and (b) The sharing of the payment of the cost of contract health care by the Department of Defense and the Department of Health and Human Services, with one such department being the primary payer of such costs and the other such department being the secondary payer of such costs." We urge this committee to take action that would change each "should" to "will" in the resolution just quoted.

The Congressional Budget Office (CBO) recently published a budget deficit reduction proposal, DEF–50, that seeks to "eliminate federal support of commissaries." It appears that some lawmakers are not fully convinced that the DOD commissary system is a necessary and valued benefit for the millions of active duty personnel, retirees, Guard and Reserve, and their families. Recommendations to make the commissary system self-supporting are not new. The reason they failed in the past is because it is the wrong thing to do! Such recommendations are based upon misperceptions of the commissary system, and demonstrate a definite lack of understanding of the positive impact this institutional benefit has on the quality of life of military personnel and their families.

We are astounded by the faulty reasoning used to justify elimination of appropriated funds for military commissaries. Studies of the system conducted over the years have consistently demonstrated that the elimination of the commissary would actually increase defense outlays because of the substantially greater budgetary expenditures for compensation, recruiting, and retention to offset the loss of the commissary benefit. Retention, particularly in technical skills, will be key to the future success of the military. The commissary benefit has been traditionally the most important non-pay benefit, next to medical care, and it is a significant contributor to retention. Equally important is the manner in which the commissary benefit is advertised to service members as an advantage for joining and a promise for remaining in the armed forces. The value of this benefit is consistently reinforced to service members throughout their careers. They are told that it is a benefit they can depend on and one that will be there when they retire. Reneging on this commitment would be unconscionable. Therefore, we must seek your support of continuing the funding of commissaries.

The combination of the pay freeze, future reduced compensation, accelerated downsizing, loss of health benefits, loss of commissary funding and COLA cuts would send a very strong negative message to current and potential military families. AFSA is greatly concerned that these proposals, in conjunction with other military-related philosophies of the administration such as the lifting of the gay ban, will cause a quick return to the "hollow force" of the '70s. This simply must not happen again! Only you and the other members of Congress can prevent it.

This concludes our statement. Thank you for considering AFSA's views.

STATEMENT OF THE AMERICAN ACADEMY OF OTOLARYNGOLOGY—HEAD AND NECK SURGERY, INC.

Mr. Chairman, I am Dr. Jerome Goldstein, Executive Vice President of the American Academy of Otolaryngology—Head and Neck Surgery. With a membership of nearly 10,000, this Academy is the world's largest medical society of physicians and scientists dealing with disorders of the ears, nose, throat, and other structures of the head and neck. I am here today to express the Academy's strong support for increased funding for tobacco cessation programs within the armed services.

For decades now, members of this specialty have been waging a war against the spread of tobacco use in this country. As specialists who take care of most of the patents in the United States with cancer of the head and neck, Otolaryngologists see the harmful effects of tobacco use among their patients every day.

In 1986, the Department of Defense issued a Directive on health promotion that established DOD policy on smoking and other health related behaviors. Since then, smoking in the armed services has significantly decreased. While we are optimistic about the steady reduction of tobacco use within the armed forces, we are concerned that tobacco use by military personnel still averages about 5–10% higher than tobacco use among the civilian population. And unfortunately, many have substituted smokeless tobacco to avoid disciplinary action under the directive.

Many have pointed to the indirect subsidized sales of tobacco products through military commissaries and PXs as a major variable responsible for the high level of tobacco usage within the military. While the Academy realizes that it is unlikely that DOD will ban the sale of tobacco products throughout the commissary system, we strongly urge that the military at least bring tobacco prices to a parity with civilian prices for tobacco.

According to the 1992 Worldwide Survey of Substance Abuse and Health Behaviors Among Military Personnel, 12–20% of military personnel within the Army, Navy, and Air Force currently use smokeless tobacco. The figure for smokeless tobacco use in the Marine Corps is 36%. Nearly half of the young men in the Marine Corps used smokeless tobacco in the past year. These figures foreshadow an ambush down the road for the military.

At the end of 1992, both the National Cancer Institute and the Inspector General of the Department of Health and Human Services issued new findings on the hazards associated with smokeless tobacco use. In presenting both reports, Surgeon General Antonia Novella warned of an impending epidemic of cancer deaths related to smokeless tobacco unless usage by young adults and the 18–25 year old age group seriously declines in the future.

In 1989, the Academy kicked off its first annual Through With Chew Campaign, a national public service campaign to educate the public about the hazards associated with smokeless tobacco. Now, in its fifth year, Through With Chew has helped educate hundreds of thousands of people about quitting smokeless tobacco.

We would hope that if introduced to the military, this Through With Chew Campaign would approximate the success attained in our working with the Babe Ruth League where all tobacco products are now banned in all of their ballparks. These baseball teams are now truly "tobacco-free".

In 1992, Captain Alan Steinman, Chief of the U.S. Coast Guard's Wellness Program, contacted the Academy seeking assistance on setting up a health promotion program that would, among other things, reduce the use of smokeless tobacco within the ranks of the Coast Guard. The Academy was pleased to respond by providing the Coast Guard with Through With Chew educational packets and video tapes for all Coast Guard Wellness Program Directors and dental clinics.

As part of the Coast Guard's efforts to reduce tobacco usage, boot camp is mandated to be tobacco free. Following seven weeks of non-tobacco boot camp, and prior to their first liberty, recruits were given a "soft-sell" anti-tobacco program.

According to a survey conducted by Captain Steinman of nearly 4,500 graduating Coast Guard recruits exposed to the program, 26% of previous tobacco users quit and 42% said they would seriously consider quitting its use in the future.

In addition to assisting the Coast Guard, the Academy was pleased to provide Through With Chew packets to crewmembers aboard the SSN *West Virginia*, the first of the Navy's submarines to adopt a smoke-free policy.

The anti-tobacco program such as the one implemented by Captain Steinman and the Coast Guard is an excellent model for other branches of the military. We ask the members of this Committee to supply the necessary funding to assist the military in its efforts to move toward a tobacco-free and healthy fighting force by the year 2000.

STATEMENT OF THE AMERICAN ASSOCIATION OF NURSE ANESTHETISTS

The American Association of Nurse Anesthetists (AANA) is the professional association that represents over 25,000 certified registered nurse anesthetists (CRNAs), which is 96 percent of the nurse anesthetists in the United States. The AANA appreciates the opportunity to provide testimony regarding the shortage of CRNAs in the military and to make recommendations regarding ways to recruit and retain CRNAs within the military. We would also like to thank this committee for the help it has given us in trying to assist the Department of Defense (DOD) and each of the Services to recruit and retain CRNAs. Our testimony will address the following issues: manpower, pay, practice, and education.

MANPOWER

Current status of CRNA force nationally.—The shortage of CRNAs in the military is affected by the overall shortage of CRNAs throughout the U.S. As reported in the 1990 Health Economics Research study, mandated by the congressional appropriations committees, there was a national shortage of 6,000 CRNAs for 1990, or a

13.6% shortfall. It further reported the need for 30,000 CRNAs by 2000, and over 35,000 CRNAs by 2010. Over the past two years, the number of graduates from CRNA education programs has increased, but not enough to meet the demand.

Current status of CRNA force in the DOD.—In all the Services, maintaining adequate numbers of active duty CRNAs is of utmost concern. Current statistics compiled by the military in response to the DOD Appropriations Act for 1993 indicate a growing CRNA shortage in the military, particularly in the Army and Air Force. The table below shows FY 1992 CRNA (active component) end strengths by Service.

NURSE CORPS (CRNAs)—FY92 END STRENGTH—ACTIVE COMPONENT

Service	Requirements	Authorizations	Inventory	Authorizations minus inventory
Army	574	303	231	−72
Navy	170	152	123	−29
Air Force	265	265	214	−51
DOD	1,009	720	568	−152

Data from the Services showing the mean years of service for CRNAs in their respective grades indicates a lack of distribution throughout the grades. With the mean so close to the 20 year point, the severity of the shortage is likely to increase as further retirements occur. This points to both a recruitment and retention problem. DOD reports that military nurses generally attend anesthesia school between their fourth and eighth years of service. Current mean years of service for active duty CRNAs by grade level are:

Grade level	*Years of service (mean)*
O–4	16
O–5	19.5
O–6	27

In addition, data shows that CRNA losses have consistently exceeded gains. Since FY 1988, Army and Air Force losses have exceeded gains by 57 (Army 22, Air Force 35). Projected CRNA status, as compiled by the Army, further indicates the increasing shortage as reflected in a comparison of authorized versus actual inventory of CRNAs.

NURSE CORPS (CRNA's) PROJECTED END STRENGTH AUTHORIZATIONS/INVENTORY/DELTA

[Active component]

Service	Fiscal year—					
	1993	1994	1995	1996	1997	1998
Army:						
Authorizations	296	296	315	315	315	315
Inventory	210	211	212	208	199	189
Delta	−86	−85	−103	−107	−116	−126
Navy:						
Authorizations	142	143	143	143	147	147
Inventory	135	138	142	142	142	142
Delta	−7	−5	−1	−1	−5	−5
Air Force:						
Authorizations	293	293	293	293	293	293
Inventory	209	203	197	191	185	179
Delta	−84	−90	−96	−102	−108	−114
DOD authorizations:						
731	732	751	751	755	755	
Inventory	554	552	551	541	526	510
Delta	−177	−180	−200	−210	−229	−245

CRNA practice in the services.—A comparison of civilian versus military CRNA practice shows the uniqueness of military service. Military CRNAs must possess a specialized body of knowledge which will enable them to perform both peacetime and mobilization roles. Their scope of practice must include all types of anesthesia, including regional anesthesia, and proficiency with austere mobilization anesthesia equipment which would rarely be seen by a civilian CRNA. Critical thinking and the ability to function autonomously in remote locations is required of all military CRNAs. Multiple administrative duties, leadership responsibilities, and supervision of personnel are a part of normal military CRNA practice, rather than an additional duty which might warrant extra compensation in the civilian sector. The work week for military CRNAs can include 20+ hours more than their civilian counterparts. On-call work is frequently every 2–3 days, with field or ship duty as required. Civilian CRNAs who have job expectations which include overtime, on-call, and other special skills and responsibilities, also have supplementary compensation which corresponds to these duties. In addition, civilian tuition, continuing education, health care, retirement, bonuses, and other benefits often equal or exceed those offered by the military.

Therefore, it is not surprising that the private sector's practice environment, pay, and potential for advancement is very alluring to military CRNAs. Hospitals, clinics, and groups seek to employ or contract with CRNAs who have the broadest experience and expertise, which points to the military trained CRNA. Retirement benefits are not sufficient to maintain an adequate supply of CRNAs in the military. And although there is a clear intent to downsize the number of military personnel generally, this does not create a concomitant need to decrease the number of anesthesia providers. The health care needs of military personnel and their families must still be met. Without additional incentives, the drain of CRNAs from the military will continue and risk mobilization capability.

PAY

In the early 1980s, once military CRNAs reached the grade of major (O–4 grade) with 12–14 years service, they could expect their salary and fringe benefits to match that of the average employed CRNA in the civilian workforce. Due to significant increases in civilian CRNA income in the past few years, military pay and fringe benefits are no longer comparable to the average employed civilian CRNA.

Civilian compensation data.—The AANA Membership Survey for Fiscal Year 1992 provided the following data for CRNAs mean gross annual salary/income by type of employment arrangement for calendar year 1990:

Employment arrangement	*Average annual salary*
Hospital	$75,233
University	71,340
CRNA/MDA group	71,079
Self-employed	111,377
CRNA group	105,319
Office, clinic, surgicenter	69,115
Locum tenens	91,447

Additionally, tangible benefits add up to 30% to the reported salaries for CRNAs in civilian employment. The survey also found that CRNAs were given bonuses on top of their base salary and benefits. Data indicated the range of bonuses given to CRNAs in civilian employment settings for 1990 was $3,827–$18,845.

Military compensation data.—The latest military compensation data, as published in the January 1993 Army Times, showed the following "salary" range for each of the above referenced grades:

Grade level	*Salary range (6–26 years)*
O–4	$49,946–$62,677
O–5	56,554–74,682
O–6	65,195–88,199

NOTE.—The figures combine Basic Pay, Basic Allowance for Quarters, Basic Allowance for Subsistence and the average Variable Housing Allowance. It also includes the tax advantage from untaxed allowances.

Additionally, tangible benefits for the military includes vacation, medical/dental, and other programs which are intended to assist in retention, but are not received if separation from the Service occurs. Military CRNAs who agree to remain on active duty for a period of at least one year can qualify for the annual $6,000 Incentive Special Pay (ISP) bonus.

CHAMPUS partnership and personal services contracts.—Army CRNAs often work next to their civilian colleagues in Army hospitals who are CHAMPUS partners or on personal services contract, due to the lack of anesthesia personnel to handle the large workload. With the new DOD policy relating to regional anesthesia (labor epidurals), which increases the availability of this service, the CRNA shortage in the military will likely increase in severity. A survey of the U.S. Army Hospitals in Health Services Command revealed the following CRNA salaries paid to civilian CRNAs in 1992 working in Health Services Command facilities:

1. General Scale (GS) employee: Only eight of 22 authorizations were filled at an annual salary of $51,000 (GS 12). Facilities report that GS salaries are not competitive in the community and that as long-time employees retire and family members of AC servicemen are reassigned, the vacant positions cannot be filled.
2. Personal services contract employee: A total of 10 contracts written at an average annual salary of $89,145, amounting to an expenditure of over $890,000. Depending on the contract, these CRNAs typically work weekdays with no on-call duties, or other administrative, supervisory, or teaching responsibilities.
3. CHAMPUS partnership employee: 27 CHAMPUS partners earned a total of $4,178,165 or an average of $125,528 per CRNA. CHAMPUS partners typically work weekdays with no on-call duties, or other administrative, supervisory, or teaching responsibilities.

Bonuses given to military anesthesiologists:	
Medical bonuses	$15,000
ISP for 1993	29,000
Variable special pay	12,000
Board certification bonus	2,500
Total bonuses available	58,500

Bonuses given to military CRNAs

Current active duty financial incentives for CRNAs include a $6,000 annual ISP bonus. Current reserve financial incentives for some CRNAs include a $10,000 selected reserve recruitment bonus. While the above incentives help, the current $6,000 ISP for active duty CRNAs is insufficient to retain senior CRNA officers until at least 20 years. As previously stated, the Army Nurse Corps is projected to be at 76% of authorized CRNA end strength for 1992; or 231 in the active duty inventory for 303 authorizations. DOD projections for the next five years indicate that CRNA losses will continue to outpace gains. In reality, increasing the CRNA ISP is much less expensive in the long run than contracting with civilian CRNAs for their services at a higher cost, which is becoming a new trend.

The current CRNA ISP budget for FY93 is $4,068,000. Projecting the maximum utilization, increasing the CRNA ISP from $6,000 to $15,000 is estimated by the military to require additional funds of $6,102,000. The $6,102,000 figure assumes that 100% authorizations were filled and all officers took the ISP. However, based on data since inception of ISP in 1990, approximately 85% of the eligible officers took the ISP. Therefore, the more realistic cost of increasing the CRNA ISP from $6,000 to $15,000 would be $5,186,700, which is almost the exact amount that DOD has spent on personal service contracts and CHAMPUS partnerships for 37 CRNAs. The AANA submits that it would be wiser to use the $5,186,000 to increase the ISP to $15,000, and thereby improve the CRNA recruitment and retention efforts by the Services.

In addition, the authority also exists for DOD to award special pay for other military nurses in critical shortage areas of practice, such as nurse midwifery. The AANA supports our nursing colleagues also receiving special retention pay, as warranted.

Recommendations

1. The $6,000 annual ISP for CRNAs should be increased to $15,000 in order to be competitive with the civilian sector. This is merely a reallocation of monies that are currently being spent on CRNA personal service contracts and CHAMPUS partnerships. Periodic examination of the effect of this bonus should be undertaken.
2. Other nurses in critical shortage areas of practice should also receive special pay as a retention tool.

PRACTICE ISSUES

A March 1989 report to Senator Daniel K. Inouye (D-HI) by the General Accounting Office entitled "DOD Health Care: Issues Involving Military Nurse Specialists" included information on CRNA concerns about their scope of practice in military hospitals and the degree of anesthesiologist supervision required. In April of 1990, the DOD submitted to the Senate and House Committees on Armed Services the congressionally mandated "Report on Military Use of Registered Nurse Anesthetists". The report described restrictions that DOD places on CRNAs. It noted that a 1983 DOD Directive 6025.2, "Nonphysician Health Care providers", that detailed requirements for physician supervision of CRNAs was rescinded in 1988. At the present time, the following three directives in the areas of quality assurance, licensure, and credentials provide the framework for health care policy in the DOD medical system: 1). DOD Directive 6025.13, "Medical Quality Assurance", 2). DOD Directive 6025.6, "Licensure of DOD Health Care Providers", and 3). DOD Directive 6025.11, "Health Care Provider Credentials Review and Clinical Privileging", which also specifies supervision and scope of practice requirements.

The report notes that DOD policy does not require direct supervision of CRNAs by anesthesiologists, nor does it restrict CRNA practice to selected procedures. Rather, it authorizes hospital commanders to make decisions about the level of independent care provided in military treatment facilities. AANA is concerned that in reality this often results in unnecessary supervision and practice restrictions placed on CRNAs, increased costs to the Services, as well as limited opportunities for CRNAs to maintain advanced clinical skills.

The report recognized that problems do exist by stating, "The Military Services have not revised CRNA guidelines to reflect current DOD policy as stated in DOD Directives 6025.11, 6025.13, and 6025.6. An effort to update policy, clarify scope of practice, and enhance communication must be undertaken to resolve nurse and physician concerns, many of which seem to result from outdated or erroneous information. . . . Given the critical importance of this group of providers, the Assistant Secretary of Defense (Health Affairs) will direct each Service to expedite a joint review of guidance to improve the critical and cooperative working relationship of these two categories of patient care professionals. Each Service will be asked to address the concerns highlighted in this report: supervision, monitoring and evaluation, scope of practice, and the granting of clinical privileges."

A critical component to guideline revision, enhanced communication, and cooperative working arrangements is the involvement of all parties in the entire decision-making process. Unfortunately, CRNAs are frequently left out of the development stage and brought in only to "review and respond" to documents which impact their practice. This affects morale by perpetuating a system which does not utilize the CRNA's knowledge and expertise.

Recommendation

Development of Anesthesia Practice Standards or Quality Assurance programs should include CRNAs in the developmental stage, and in the review of drafts.

EDUCATION

The Health Professions Scholarship Program for Anesthesia Nursing provides financial assistance to professional nurses who are pursuing a master's degree in anesthesia nursing. The Services all sponsor two general categories of nurse anesthesia training: 1) In-house programs conducted by the Services and 2) Programs which fully fund, or provide financial assistance to, participants in nurse anesthesia programs conducted by civilian educational institutions. The DOD report on military use of CRNAs found that the number of participants in both categories of nurse anesthesia education programs sponsored by the military departments was 180 in 1990.

DOD statistics show that CRNA recruitment occurs primarily through Nurse Corps officers who choose to continue their education and specialize in nurse anesthesia. Student access to the Health Professions Scholarship Program has been a critical component to the recruitment efforts by the Services. Other avenues of recruitment of civilian CRNAs into the Services has been virtually impossible since fiscal year 1990, at which time civilian CRNA pay rose sharply. Recent statistics from all Services indicate that the majority of CRNAs (79%) are produced from within the Services. A total of 36 military CRNAs in faculty positions are required to 'maintain the current level of training for Service CRNA programs.

Additionally, the cost to educate nurse anesthetists is significantly lower than the educational costs for anesthesiologists. Becoming a CRNA takes an average of 27 months additional education beyond the nurse's baccalaureate education (four years); while becoming an anesthesiologist takes a minimum of 12 years, which includes a four-year residency. 1992 data from the AANA Council on Accreditation survey of nurse anesthesia programs indicates that the average annual program cost per student nurse anesthetists is $11,741. The total cost for 27 months of CRNA education would therefore be approximately $26,417 ($11,741 per year × 2.25 years). According to 1990 HCFA data, the average annual residency program cost per medical resident was $84,837. The total cost for a four-year anesthesiologist residency would therefore be approximately $339,400 ($84,837 per year × 4 years). AANA estimates that 10 CRNAs can be educated for the cost of educating one anesthesiologist. With the shorter training period, the 10 CRNAs will each be in practice for several years before the one anesthesiologist completes his/her residency. A federal study comparing the costs of education for CRNAs versus anesthesiologists would provide valuable data for decision-making on the allocation of scarce federal resources to support health professions education.

Recommendations

1. A congressionally-mandated study should be done to compare the education costs for CRNAs versus anesthesiologists.
2. Funding should be available for additional seats within military schools of nurse anesthesia education; DOD graduate medical education monies should be available to these nurse anesthesia education programs.

Conclusion

In conclusion, the AANA believes that the recruitment and retention of CRNAs in the Services is of critical concern. Efforts to alleviate the current and future shortage must address manpower, pay, practice, and education. Military service must be attractive to those considering entering the field of nurse anesthesia. This can be accomplished through enhanced educational opportunities currently offered by DOD and the addressing of practice and pay issues. Increasing the ISP and involvement of CRNAs in the development of anesthesia practice standards will assist the Services in maintaining the military's ability to meet its peacetime and mobilization medical mission.

STATEMENT OF THE AMERICAN INSTITUTE OF AERONAUTICS AND ASTRONAUTICS

The American Institute of Aeronautics and Astronautics (AIAA) appreciates the opportunity to present our views on Defense. The American Institute of Aeronautics and Astronautics has over 44,000 professional and student members. Members are drawn from throughout the scientific and engineering disciplines within the aerospace industry, government agencies, and academia. Nearly half of AIAA members are specifically involved in the research, design, development, test, production or operation of military aerospace systems as members of the private or public sectors of the defense/industrial base.

As the nation's aerospace professional society, our mission is to advance the arts, sciences, and technology of aeronautics and astronautics the world over and to promote the professionalism of those engaged in these pursuits. AIAA's Public Policy activity keeps our members aware of the changing environment, emerging government and industrial policies and promulgates policy positions that the members believe are important to continuing National superiority in defense, aeronautics, and astronautics.

The nation and the membership of the AIAA are in transition from the cold war to a period whose industrial characteristics have yet to be fully defined. Many jobs will change. Our members have asked that we speak to you on issues involved in the defense downsizing and conversion in the context of maintaining national security, and the importance to the nation of retaining and effectively utilizing critical professional skills and industrial capabilities.

Because our national security is inevitably linked to overall economic and technological strength and security, it is important that our defense strategy provide a road map or plan that retains the economic strengths of our aerospace industry, which is one of very few in the industrial segment of our economy still providing a strong balance of trade abroad.

In last year's testimony we emphasized the continuing need for superior quality defense forces to maintain the capability to meet what has become a new standard of excellence—the power to quickly and decisively overwhelm any aggressor force while sustaining few casualties and minimizing collateral damage and casualties as demonstrated in the Gulf War.

To accomplish long range national security, we need to: (1) continue the high rate of advance in science and technology and reduce the time it takes to field new advanced technology weapons and subsystems, (2) use this technological advantage—and its timely implementation—to deter potential opponents from initiating conflict, (3) expedite the process of putting advances into the hands of the troops so that they have a better chance of succeeding and surviving on the battlefield when deterrence fails, (4) reduce the risk and cost of putting new weapons in the field, (5) sustain industrial and worker skills that are unique to defense and are essential to preserving capabilities.

We believe all of these can be achieved within the limitations of a reasonable defense budget. The effort must be undertaken in a rapidly changing environment of declining defense needs and a growing emphasis on conversion to commercial acquisition processes, business practices, and eventually production. As has been pointed out by Department Secretary of Defense William Perry and others in a paper called, A Radical Reform of the Defense Agency Systems. Released in March, we believe that current costly defense specific acquisition regulation must be severely reduce and eliminated to avoid unaffordable defense systems in the future. Our testimony this year will: (1) emphasize the need for understanding the real impact of the rapid downsizing of defense in a time when the economy is far from robust and attempting to deal with the huge deficit, (2) address the role of government in redefining the aerospace industry through defense reinvestment and conversion and through reforming the defense acquisition system, and (3) propose elements of an acquisition strategy which we believe can maintain superior quality defense forces, even while rapidly downsizing, and maintain a robust aerospace industry to enhance our competitiveness in the international marketplace.

DEFENSE DOWNSIZING

Private sector defense industry jobs number over three million; the aerospace industry's employment levels represent about two million of these, about 2 percent of total U.S. employment, and almost 9% of U.S. manufacturing employment. In 1990, this industry had total defense sales of about $134 billion. In terms of international trade, the industry has contributed about $100 billion in favorable balances over the last ten years. There have been a number of studies by the government and by private sector organizations on the impact of the defense decline on the working population and there continues to be disagreement about the severity of the decline, the length of the decline, and how the government should act to influence the downsizing.

The negative impact

Estimates of the impact of defense downsizing on private sector jobs range from a low of 800,000 between 1991 and 1997 to estimates of several million. The lower numbers seem to focus only on employees directly affected, and assume a defense budget as projected by the previous administration. More complete projections suggest that about 2½ million jobs will be eliminated by the end of the decade, and an additional 2½ million jobs will be lost in the local economies that benefit from defense workers. In essence, five million jobs are going to disappear.[1]

The negative effects of the precipitous decline in the defense-related job markets have been de-emphasized by studies which make comparisons to declines which followed WW I, WW II, and the Korean Conflict. Economic models have been used to point out that a vibrant economy will generate replacement jobs if the defense savings are turned back to the public and not put into other government programs, and if one allows six to eight years for the economy to rebound. The AIAA feels that some current assessments of severity greatly understate the situation as it will affect the economy as a whole.

First, the minimizing of the severity of the decline by comparing it to previous post-war periods overlooks the point that the impact of cutbacks are directly affected by the robustness of the economy. The current decline, while it takes place over a longer period of time, is occurring in a period in which the nation's economy continues to go through a redefinition of its competitive position within the world community. It is also noted that the comparisons with the previous post-war periods tend not to state that in all three past cases the decline caused a recession even though in at least one case there was a pent up public demand for improved quality of life amenities that had been sacrificed for the war effort.

Second, over the last 50 years our government has, through laws and regulations, created a large sector of the economy with unique business practices unlike those found in commercial industry. Defense business practices have so severely diverged from commercial business practices that it is very difficult for existing defense businesses to convert to commercial products and services. Many management and financial infrastructures are not appropriate and are non-competitive in the commercial world. This was not the case following World War II in which the build-up of defense systems was largely produced by previously commercial factories and using largely commercial business practices.

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[1] *Converting the Cold War Economy*—p. 25, Economic Policy Institute Report by Ann Markusen dated late 1992.

Third, and most important, this downturn is unique because it permanently reduces and redefines an industrial sector that has for half a century been a cornerstone of the U.S. commercial and technological advance. U.S. leadership in space, commercial aircraft, commercial electronics, material sciences, and communications owe much to the contributions of this sector since world War II. Its seemingly small percentage of the overall work force, therefore, grossly underrepresents the importance of the defense/aerospace sector to creating new industries of the future.

Fourth, studies understate the effect on the U.S. of this downturn because they equate the value of a job in this sector to be the same as in any other. However, aerospace jobs whether they are professional or labor union represented, are fully supported by the security of health care, retirement benefits, professional and blue collar representation, and other valuable components of productive employment. As mentioned earlier, two and one-half million of these jobs are disappearing in an economy that offers little hope of replacing them with anything remotely equivalent, at least for some number of years. The AIAA is concerned that some elements of the government are not adequately considering these four points as they dismember the industry under the broader imperative of defense downsizing.

Science and technology are viewed by many, including President Clinton, Vice President Gore, the Congress, and the public at large as the "engine of future prosperity" for the American economy in the coming decades.[2] The scientists and engineers of the AIAA will, along with their colleagues in other professional disciplines, provide the well spring for the leading industrial products of the next century. The four points above underscore the importance of exercising great caution in the downsizing of this industry.

ROLE OF GOVERNMENT IN REDEFINING THE AEROSPACE INDUSTRY

The collapse of the USSR has provoked a paradigm change. We need to think about potential opponents in a different way, about a reorganization of the U.S. military in a new way, and about a smaller defense industrial base. Also, we need to think about a smaller government bureaucracy with different objectives and more efficient management. We need to think about a different way to consciously integrate government policy and industry development to improve American competitive advantage. Only then will taxpayers realize the strong defense capability and the strong commercial aerospace industry they deserve for their dollar.

Unlike any other segment of the economy, the defense sector is so completely under the influence of the government (as the principal customer and maker of the rules of the market) that the defense sector offers the government an opportunity to develop policies in a setting in which it has more control over the potential effects than in any other sector. This is also an opportunity to begin developing policies, such as lifetime education, which will be necessary for the health and welfare of the highly fluid and dynamic work force environment of the next century.

Superior defense force still required

We believe it is necessary in this post-cold war era to recognize that threats to our national security continue. Disorders in the Former Soviet Union (FSU), for example, pose grave threats due to inter-republic conflicts and the potential for reemergence of reactionary forces that could gain control of existing long range nuclear capabilities. The Middle East will also continue to be an area of instability for which the existence of American military strength may be the primary deterrent to aggression. North Korea is potentially another. Threats to our national security are no longer conveniently aligned solely with communist aggression, but instead are spread among many factions as the proliferation of nuclear, biological and chemical weapons of mass destruction continue. While the changing world situation may permit deeper cuts in strategic nuclear systems and modest cuts in tactical conventional systems, it seems clear that a military strategy based on technical superiority, rather than the size of a standing military, remains our best assurance of continued national security and world stability. This approach requires continued strong technology development programs like those implemented by the defense aerospace industry. The first priority of government in redefining the defense industry should be to retain the critical capabilities needed for future national security.

The process of change which is taking place is going to take more than a decade to run its course; the government needs to assemble a set of policies, and to approach the defense transition, with a very long-term perspective. The AIAA believes that government must become involved in the redefinition of the defense and aerospace industry through support offered in two areas:

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[2] *Technology: The Engine of Economic Growth, a National Technology Policy for America*, Clinton Gore Campaign Data, Sept. 21, 1992.

Changing Government oversight.—The shape and operational practices of this industrial sector have been established by the government over a half century, and only government can remove them. Unique accounting practices, numerous on-site government workers, multiple reporting demands—all are special government requirements not found in commercial industry. If the government does not redefine itself dramatically, the continuation of such activities will result in a defense industry exactly like the current, only smaller, more costly, even less efficient, with many companies exiting, and with few companies willing to enter. The absence of new entering companies is critical, because it will mean a decline of new ideas in technology, which is the fundamental basis for the U.S. enduring military advantage and economic competitiveness worldwide.

Maintaining the balance between public and private sectors.—Government is an integral part of the industry and must contribute its fair share to the change. There needs to be an appropriate balance between the public and private sectors. For example, according to current plans, between 1991 and 1997 only 10 percent of DOD civilian jobs will be eliminated; 27% of private sector jobs will disappear. This is an inappropriate balance if we are to maintain the strong, private enterprises that created victory in the cold war. Full spectrum capability to design, develop, produce and support high technology defense systems resides in private industry. As a second example, current trends suggest that the public sector is not reducing capacity—in fact it is adding capacity in some cases—as defense spending is reduced. (The fiscal year 1994 Defense Budget currently projects a 26% increase in Military Construction over fiscal year 1993.) Finally, the process for assigning work to government over private firms should be examined. Finally, the process for assigning work to government over private firms should be examined. In particular, depot and other support work that helps sustain the industrial base should be considered for placement in private industry. Depots that are deemed to be excess to defense needs should be closed as part of the base closure process, and potentially common depots from different government agencies such as NASA and military electronic parts identified and combined. Necessary organic capabilities should be identified and retained within the public sector; the private sector should compete for the rest.

Defense reinvestment and conversion initiative

Defense conversion is going to be one of the defining issues of national and economic security in this decade. Some, we fear, see conversion as only a politically convenient term to funnel a minor amount of money to a few companies and individuals to replace the enormous amounts being withdrawn from the defense sector at large.

On March 11 President Clinton announced a major Defense Reinvestment and Conversion Initiative that will go into effect immediately. The Clinton Administration will distribute $1.7 billion that Congress appropriated last year for defense conversion. Regrettably, the FY93 Defense Reinvestment appropriations ($1.7B) will do little to meet the need. Only $455M is directed toward dual-use technology and commercial-military integration activities that may assist major aerospace manufacturers in transitioning dual-use technologies. Even if all of the $1.7B was programmed for this purpose, it would do little to offset the $10B-plus real reduction in the FY93 defense budget. Furthermore, because these funds are divided into 18 parts in 4 major categories, we are concerned that much of it will be consumed by added bureaucracy to administer the funds.

Nevertheless, the defense reinvestment and conversion initiative is an important step in the right direction and is appropriately administered by a consortium of five government agencies with the Advanced Research Projects Agency (ARPPA) in the lead. We recommend:

—Emphasis be placed on the maturity and application of primarily defense-related aerospace technology that can have commercial application. The focus should be on transitioning excess defense capacity, both people and facilities, to commercial aerospace to retain proficiency of design teams, production workers and plant equipment, thereby retaining the productivity of an industry that contributes to the health of the economy in so many ways.

—That ARPA also emphasize projects that can help lead to the overall shortening of the development-to-production period of acquisition, and help find ways to sustain and enhance the defense unique engineering and manufacturing skills that exist.

—Also that conversion of commercially developed technology to defense application be an important part of the conversion objectives.

International influences

The de-facto degree of internationalization of the aerospace industry must be recognized. The FSX, Boeing 777, etc., products containing a large degree of foreign content, are becoming the rule rather than the exception. This financial and technical reality must be taken into account for future foreign military sales (FMS) policy decisions. Economic and military strength will increasingly require international cooperation as well as competition. Affordability will require more cooperative projects. The U.S. does not lead in all technologies. France and Germany lead in some, Japan in others. FMS will become increasingly important to the U.S. defense industry to preserve critical core capabilities and capacities. To be competitive, the U.S. Government must take a proactive role and remove barriers, such as recoupment, that make U.S. defense products less competitive.

In summary, how the government acts in the next several years will determine our national security capabilities in the next century. The government can reduce its purchases and allow market and bureaucratic political forces to define the remnants of the industry at the turn of the century. However, there is a high probability that what emerges will be less efficient and less effective in meeting the national security needs which will clearly continue to be important. Or, the government can take more of a leadership role, based on vision and a sense of equality.

ACQUISITION STRATEGY FOR A NEW ERA

The goal of a new defense and acquisition strategy must be to maintain our ability to perform to the standard established in Desert Storm: superior technologies providing quick and decisive victory with minimal loss of life whenever and wherever needed. Because technology never stands still—in the U.S. or abroad—it will be necessary to improve continuously the technical quality of our systems and equipment fielded in the active and reserve ready forces. New weapons have to be available to America's armed forces on a continuing basis for them to become proficient in their employment. If new systems are put into storage until a need leads to their production, or are recycled through iterations of prototyping, the troops and their leaders will not acquire and maintain their skills and confidence in using them when called upon to do so.

An acquisition strategy designed to achieve these quality and readiness standards must be attentive to maintaining a strong industrial base. In particular, the strategy should be attentive to the parallel objectives of (1) supporting the aerospace industries' unique "design, build and field" capabilities and (2) offering continuous opportunities to undertake profitable RDT&E work. Successful strategy must also provide the foundation for a long-term focused budgetary planning process.

The elements of such an acquisition strategy are present in an approach that decouples the development process from a commitment to production. Today, development activity is limited by the requirement that Engineering and Manufacturing Development (EMD) and production be fully funded in the Future Years Defense Budget (FYDP). By decoupling development from a commitment to production within a budget planning framework, we can nurture a culling process in which only the most superior technological ideas will eventually reach low rate production and be fielded.

For example, in each decade, 400 Mission Need Studies (1-year duration each) could feed into 100 Concept Exploration & Definition projects (2-year duration each), which could feed into 30 Dem Vals (3-year duration), which could feed into 10 EMDs (4-year duration) and 3 production programs by competitively down-selecting to only the best at each phase along the way. This will continuously place new technology systems, both product and process-matured, into the field for tactical exploitation, training, planning, and support.

In summary, the result would be continuous exercising and refinement of a process that could be applied to defense programs or to programs of diversification into the commercial environment. The process would begin with a large number of proposed innovations that would be culled at successive acquisition milestones. The result of the overall process would be more Concept Exploration and Definition (CE&D) and Demonstration/Validation (Dem/Val) projects, an affordable and predictable number of aircraft Engineering and Manufacturing Developments (in the above example, 10 aircraft per decade), and a smaller number of low rate production programs (in the above example, 3 per decade).

Implementation of this development and acquisition strategy would sustain and stabilize a sufficient number of competitive engineering teams, while continuously enhancing our technology base and delivering clearly superior weapon systems to our operational commands.

Recommendations

We recommend that the "spirit" in which defense conversion is to be implemented emphasize investment in those opportunities that not only enhance the National Security (focus on the defense side of dual-use), but help the defense industry to make itself competitive in a world-class market. AIAA recommends that the DOD and Congress:

—Move toward a structure where there will be very few defense-unique sectors (for example, submarines, tanks, and combat aircraft) and a larger number of sectors which are fully integrated in terms of the civilian and military industrial applications. Large numbers of subsystems for even the unique platforms could be procured using commercial best practices.

—Incentivize projects which use industrial specifications and standards as the norm and require the justification of each military specification and standard that is proposed.

—Use "Budget Templates" to gauge and ensure adequate defense investment is apportioned from Mission Need Studies to Concept Exploration & Definition (CE&D) projects to Dem Vals to EMDs, and finally to efficient low rate production.

—Incentivize industry to refacilitize from mass production operations to flexible manufacturing operations, where high efficiencies can be achieved with multi-product, low-volume operations.

—Incentivize cost control as a critical part of the weapon requirements process. Avoid fixed-price development contracts in favor of cost-plus contracts that allow sharing of cost savings in such a way as to provide higher profits when programs are performed at lower than expected cost.

Any strategy or policy that stops even momentarily the continuous flow of new technology advanced systems into the hands of America's armed forces will inevitably cause our qualitative advantage over potential adversaries to erode and with it our ability to maintain flexible, mobile, agile and swift victorious responses to would-be aggressors. In responding to reduced defense needs and correspondingly reduced defense resources as a result of the end of the Cold War, we should be ever mindful of America's commitment to technological superiority that made this positive result possible.

In the final analysis, we must remember that our technological superiority has been produced by the commitment and efforts of the scientists, engineers, and production line workers of the U.S. aerospace industry—including, to a significant degree, our AIAA members. Public policy rhetoric and macroeconomic abstractions will be of little comfort to the unemployed staffs of companies in Texas, Connecticut, New York, California and elsewhere around the nation if it is going to take 6 or 7 years for the job market to rebound to the point that they can be reemployed in comparably paying positions that include the security of health and retirement programs.

STATEMENT OF THE AMERICAN PSYCHIATRIC ASSOCIATION

The American Psychiatric Association (APA), a medical specialty society representing 38,000 psychiatrists nationwide, is pleased to submit this statement on the FY 1994 Defense Department Appropriations Bill for the hearing record.

This statement focuses on two important issues of concern to the APA: 1) A DOD demonstration to train military psychologists to prescribe psychoactive medications. 2) The removal of the ban on gay and lesbian military service.

MILITARY PSYCHOLOGISTS PRESCRIBING DEMONSTRATION

The APA is well aware of the Chairman's long-standing interest in the feasibility to train military psychologists to prescribe psychoactive medications. With all due respect to the Chairman of the Senate Defense Appropriations Subcommittee, the APA as an organization representing psychiatric physicians feels it would be helpful for the Committee to outline our over arching objections to this demonstration, as well as to describe our specific objections to aspects of the ongoing and what we now understand is a second iteration of this ill conceived demonstration.

Overarching objections

APA strongly believes that the prescribing of potentially dangerous psychoactive medications should he limited to those professionals who have the proper medical education and residency training. APA opposition to this demonstration program is based upon the following:

APA and AMA believe that the decision to prescribe medications, as well as the determination of which medications to prescribe and monitoring the potential side effect, is a unique aspect of the practice of medicine.

Like all physicians, psychiatrists spend many years training for the practice of medicine—four years of "pre-Med" undergraduate education, four years of medical school, and four years of residency training. Prior to prescribing a medication, it is necessary to obtain a patient's complete medical history; perform or interpret a physical exam, appropriate laboratory tests, and psychological tests; and determine which other medications are being taken by the patient to make the correct diagnosis; to prescribe the appropriate medication at a safe dosage level; and to avoid potentially fatal drug interactions.

While the APA appreciates and applauds the role that clinical psychologists play in the provision of mental health services, to allow non-physician clinical psychologists in the military to undertake medication tasks is inappropriate and clinically dangerous to patients.

Psychoactive medications are physiologically complex and potentially dangerous, because of the inherent dangers associated with the authority to prescribe. The medications affect not only behavior but all organ systems within the body as well. Prescribing an inappropriate psychoactive medication or an inappropriate dosage level, may result in significant danger to the patient.

No state permits clinical psychologists to prescribe psychoactive medication, for good reason—insuring patient safety!

Allowing non-physicians to practice medicine by authorizing them to prescribe psychoactive medication suggests a move toward two-tier medicine; one level of care acceptable for civilians and a lesser level of care for America's military men and women.

To our knowledge, at no time has the DOD indicated their need for additional personnel who possess the authority to prescribe psychoactive medications. To the contrary, DOD representatives continue to articulate no clear need for such an initiative.

In fact, two years ago during the House Committee on Armed Services hearing on the FY 1992 Defense Authorization bill (H.R. 2100), Lt. General Monte B. Miller. M.D. (Surgeon General, United States Air Force) stated: "My personal and professional opinion is that this whole project is ill conceived and ill founded. Psychologists possess valuable skills and make valuable contributions to the mental health field, but they are not prepared to practice medicine. Psychologists do not have the background training in the pathophysiology of organ systems necessary to understand how drugs work; they do not have enough background in biochemistry to understand the composition of drugs or how they work; and they do not understand enough about drug side effects or drug-drug interactions to be able to prescribe safely. In fact, the blue ribbon panel [called together by the DOD to design this pilot program] did not arrive at a clear consensus of what should be done and reinvented a mini-medical school curriculum in an abbreviated fashion. I do not believe the current curriculum can prepare psychologists to prescribe independently and, I must underscore, that this is the intent of the program.

"I believe that training psychologists to the level essential to safe practice will prove to be equivalent to the cost of attending medical school. The drugs used in psychiatry are some of the most toxic of all drugs prescribed. There are, for example, over 60 antidepressants on the market, precisely because of the problematic nature of their side effects. The number of antipsychotic and antianxiety drugs are similar multiplied for the same reason. These drugs effect everything from blood clotting to respiration and cardiac function. Psychologists are not qualified to enter this dangerous area as independent practitioners.

"Military medicine has been unable to identify that requirement. That is we do not see a need to train psychologists to prescribe medications. . . . The AMA has made a clear statement opposing this program, as have a number of active duty and retired groups who have an interest in military medical care. We have made great strides in identifying military medicine with quality health care. It is just this kind of poorly conceived and frankly dangerous experiment which jeopardizes what we have worked so hard to achieve."

Given the sensitivity of this pilot demonstration, the APA respectfully submits that any expansion of or follow-on programs to the present military psychologist prescribing pilot program should be explicitly prohibited until after the initial pilot program has been completed and evaluated.

SPECIFIC OBJECTIONS TO THE ONGOING DEMONSTRATION AND TO THE SECOND ITERATION

It is our understanding that of the original four military clinical psychologists enrolled in the psychology prescribing training demonstration, one individual voluntarily resigned from the program in the Fall of 1992 and another individual will be leaving the program this summer to begin his first year of medical school at the Uniformed Services University of Health Sciences (USUHS). Consequently, two individuals remain in the pilot demonstration program and both will begin a patient care training component at the Walter Reed Army Medical Center in Washington, D.C. This one-year patient care training component (added to the two years of didactic training) will, as we understand. allow the two psychologist "fellows" to "manage" 100 psychiatric patients at Walter Reed. It is further our understanding that any Walter Reed patient may become a subject in this experimental demonstration.

The APA takes strong objection to expanding the program—despite a contrary Congressional directive—to include non-active duty military personnel and other non-military Walter Reed patients in the patient care training component of the demonstration. Congress itself was concerned about the inclusion of non-military personnel in this demonstration and in the Conference Report on the FY 1991 Defense Appropriation bill (quoted below) specifically prohibited the DOD from involving non-military personnel in the program.

"The conferees agree that the Department cannot ignore direction from Congress and therefore should develop such a training program in fiscal year 1990. However, the conferees agree that the pilot program be designed so that military psychologists could be trained and authorized to issue appropriate psychotropic medications to military personnel only." (House Conference Report 101–345 on the FY 1991 Defense Appropriations bill.)

While the APA recognizes why Congress might wish to expand the clinical training segment of the program, APA urges the Committee to halt any inclusion of non-active duty military personnel from this potentially dangerous and experimental demonstration program.

Earlier this year, we learned that former Assistant Secretary for Health Affairs Enrique Mendez, Jr., M.D. prior to leaving his post with the departure of the Bush Administration, issued orders to the three services to nominate two clinical psychologists each to begin a second iteration of the psychology prescribing training demonstration during the summer of 1993. We now understand that two new psychologist "fellows"—one from the Navy and one from the Air Force—will begin a second "class" in the psychology prescribing training demonstration.

The APA believes the DOD's move to establish a second iteration of this ill conceived training effort is outrageous. This move to establish a second iteration of the demonstration comes before the first pilot has been completed, before a full and independent evaluation of the initial program has been conducted, and before any formal action by Congress to authorize a second iteration of the demonstration program has taken place.

Furthermore, the American College of Neuropsychopharmocology (ACNP)—the DOD contractor responsible for providing evaluation progress reports on the initial pilot program—has stated that given the lack of sufficient medical science training of the initial "fellows" and their resulting difficulty with the medical courses contained in the didactic portion of the program, that any future "fellows" should have completed certain pre-medical school prerequisites such as completing courses in physiology, anatomy, biochemistry to mention a few. It is our understanding the two new "fellows" for the second iteration have not completed those prerequisites in undergraduate-level science.

Given the historic controversy surrounding this demonstration program, the lack of full and independent evaluation of the initial pilot and Congressional authorization for a second iteration, and the failure of the new "fellows" to meet certain educational prerequisites, we urge the Committee to put an immediate halt to this second iteration.

REMOVAL OF THE BAN AGAINST GAY AND LESBIAN MILITARY SERVICE

The APA strongly supports the Clinton Administration's goal to overturn the current ban on gay and lesbian military service and we urge the Committee's consideration of our views.

Many gay and lesbian Americans have honorably served in the U.S. military without having their sexual orientation become a reason for discharge, yet many arguments have been put forth for the maintenance of this ban in recent House and Senate hearings on this issue. Those arguments range from concerns regarding the suitability of lesbians and gay men for military service, to potential threats to morale and good order of the troops, to sexual harassment and personal privacy concerns.

Each of these concerns and others raised in opposition to lifting the current ban on gay and lesbian military service can be dealt with in a rational and direct way by, for example, establishing uniform public conduct standards that apply equally to heterosexual, homosexual and bisexual personnel; dealing with sexual harassment as a form of military conduct abridgement regardless if the acts of harassment are same or opposite gender directed; and establishing fitness/suitability for duty standards without regard to one's gender or sexual orientation. The NORDSOM (National Organizations Responding to Discrimination on the Basis of Sexual Orientation in the Military) Coalition—which the APA is a member of—testimony given before the House Armed Services Committee on May 5, 1993, discussed such concerns in great detail.

While lifting the military ban on lesbian and gay service can and should be addressed in a rational and direct manner, the sometimes heated Congressional debate on this issue has raised the ugly specter of discrimination—rooted in irrational fear and ignorance—against homosexuals.

Both the Senate and House Armed Services Committee hearings on lifting the ban on gay and lesbian military service have, for example, raised a number of critical questions relating to human behavior and sexuality. One such question raised in the Senate Armed Services Committee was addressed to a naval fighter pilot who publicly acknowledged being gay. A Senator asked him if he had considered seeking counseling or psychiatric help to change his sexual orientation. Without regard to the response, this question raises an important underlying assumption, one that has not received much public discussion in the Congressional hearings on this issue to date but one which apparently colors erroneously certain person's perceptions of gays and lesbians in this debate. That assumption, of course, is that homosexuality per se is a mental disorder that is "curable" by a psychiatrist.

As medical professionals we know that this assumption is incorrect. Homosexuality is not a mental disorder; nor is there evidence that any treatment can change a person's sexual orientation, whether it is heterosexuality or homosexuality.

Clearly, the DOD's current policy banning lesbian and gay people from military service as well as the perceptions of some segments of the public have their roots in pre-World War II mental health concepts regarding psychiatric understanding of same-gender sexual orientation which have since been rejected by psychiatry and the other mental health professions. Much of the scientific research leading up to the removal of homosexuality from the APA's list of mental disorders was conducted by Dr. Evelyn Hooker beginning in 1957. Dr. Hooker's pioneering work—and dozens of other empirical studies since that time—have supported the conclusion that no correlation exists between sexual orientation and psychopathology.

Drawing on the pertinent professional experience of our members—physicians who are most knowledgeable about the military and the education/adjustment issues surrounding homosexuality—the APA individually and as a member of National Organizations Responding to Sexual Discrimination in the Military, can be a valuable resource in addressing the psychological concerns attendant to such a significant change in DOD policy. The APA offers its support and assistance to the Congress on this matter.

STATEMENT OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

This testimony is submitted on behalf of the American Psychological Association (APA), a scientific and professional organization of over 118,000 psychologists, many of whom conduct behavioral research relevant to the military.

Changing world circumstances and the dramatic realignment of the United States and its allies vis a vis the former Soviet Union have precipitated a thorough review of the Department of Defense and its role in our post-Cold War world. It is now widely recognized that a smaller, but more technologically sophisticated force, will be required in the future—and downsizing is proceeding accordingly. There is also an increasing emphasis on technology transfer from Defense to civilian applications. The constant demand for technological innovation to fuel economic growth, and to improve education and training, are but two examples where DOD-sponsored research has made, and continue to make, substantial contributions. The renaming of the Defense Advanced Research Projects Agency (DARPA) to the Advanced Research Projects Agency (ARPA) is symbolic of this new emphasis.

Overall declining DOD budgets have led to the development of a new acquisition strategy aimed at buying fewer expensive, new systems. DOD will increasingly rely on upgrades and technological innovations generated from its R&D programs. This will make effective use of manpower more critical than it has been to date.

What is not so widely appreciated is the importance of human resources in the effective deployment of advanced systems, and the vital role that DOD sponsored behavioral research has played in both military and civilian applications. The advanced weaponry on display in Desert Storm captured the public's imagination, and deservedly so. What is often overlooked, even within the services and the DOD research establishment, is that it takes sophisticated people to make it all work. The superb performance of our forces was no accident. It was the end product of decades of R&D in personnel selection and classification, training, and human factors engineering. As the Air Forte is fond of saying, "there are no unmanned systems."

The contributions of psychological research range from improvements in the selection and assignment of personnel, to the training and maintenance of skills, and the design of the human-machine interface to ensure efficient and safe operation of increasingly complex hardware. These contributions encompass the full spectrum from basic 6.1 programs (that generate conceptual principles), to 6.2 programs (that validate those principles for specific applications), to 6.3A programs (that yield actual "product" demonstrations). DOD provides a unique environment for this kind of smooth transition from concept to systems application—in behavioral as well as physical and biological science. It is important that none of the phases be compromised, particularly the 6.1 and 6.2 elements that fuel future innovation.

The DOD structure that enables basic 6.1 research knowledge to transition smoothly into 6.2 principles, 6.3a demonstrations, and eventually fielded products and problem solutions, is unique in science. The closely coupled intramural and extramural programs that enlist the nation's best minds in the search for relevant knowledge—while ensuring that the knowledge is used judiciously—is also unique.

There is broad recognition that basic research needs to be sustained through 6.1 funding, and APA's support for those programs is outlined below. The support for the vital 6.2 component that links the basic research to specific applications, and funds the service laboratories, is apparently not so strong. Nearly $200 million for "infrastructure" was removed from the FY 94 budget request of the Office of the Secretary of Defense. This money would come from the service laboratories, undoubtedly including personnel cuts from the research staff. Healthy service laboratories, staffed with quality scientists, are an essential part of DOD research, development, testing, and acquisition.

The remainder of APA's testimony will focus on the three services under which most of the 6.1 behavioral research is conducted.

OFFICE OF NAVAL RESEARCH

The Cognitive and Neural Sciences Division (CNS), one of two Divisions in ONR's Life Sciences Directorate, supports research to develop fundamental knowledge about human capabilities and performance characteristics. The results from this research are used to improve the personnel selection process, training, and equipment and system designs for human operation and maintenance. APA urges the Subcommittee to approve the fiscal year 1994 $17.5 million request for all of ONR—which will support ongoing research, and foster new projects, in the following areas within CNS:

Cognitive science

The research supported through this program provides greater understanding of complex cognitive skills in humans. Results of this research will help develop or improve: 1) personnel testing and selection measures, and the development of individualized training based on accurate assessments of cognitive capacities; 2) skill analysis that will be used to design training and testing systems; 3) artificially intelligent, computer-assisted instruction systems; and, 4) personnel selection and classification, career counseling, and performance evaluations.

Perceptual science

This program is expected to contribute to the development and improvement of machine vision, improved human factors engineering in new technologies, and robotic systems (including "intelligent hands"). It is hoped that reverse engineering of biological systems, examined in this program and others, will lead to innovative designs for robotics systems and signal processing (i.e. visual and auditory object recognition). Cutting edge research is supported by encouraging interdisciplinary teams in psychology, neuroscience, and computer science.

Biological intelligence

Reverse engineering is again the guiding theory behind the research supported through this program. Intelligence in biological organisms is studied in an attempt to uncover the organizational principles and operational rules in neural networks that produce "intelligence." Emulation of these biological, neural network characteristics would then be used in the design of electronic information processing systems. This exciting line of research could produce new, innovative ways of producing machine intelligence. Psychological science brings expertise in cognition, including the underlying physical mechanisms, to this area of research.

Stress and performance

This is a core research initiative of CNS which aims to relate the physiology of stress to psychological performance. This includes research on brain mechanisms of memory that may be affected by stress, individual differences in reacting to stress, the prediction of individual performance under stress, and team decision-making under stress. This research has obvious applications to the performance of military personnel in high stress situations. It also has potential civilian applications in a variety of areas such as nuclear plant operation, police work, and other high stress occupations with critical outcomes.

In addition to the above programs, ONR's Cognitive and Neural Science Division also participates in the Manpower, Personnel and Training Research and Development Program and the University Research Initiative (URI) program. The Manpower program is an applied research program concerned with advanced instructional technology, and personnel testing, assignment and measurement. The URI is a special program of basic research designed to increase knowledge of how coordination is achieved and maintained by hierarchical decision-making teams in stressful environments.

AIR FORCE OFFICE OF SCIENTIFIC RESEARCH

The Directorate of Life and Environmental Sciences is one of five in AFOSR and supports basic research the Air Force laboratories and through extramural grants. APA supports the $48.12 million FY94 request for Life and Environmental Sciences. This money will help support research of interest to the Air Force, including research in these program areas.

Perception and recognition

Research supported through this program seeks to identify the underlying mechanisms involved in sensory pattern perception and recognition. For example, understanding how humans perceive, recognize, and process visual information is very important to training pilots and in designing instrument arrays for maximum utility and speed.

Spatial orientation

Of special interest to the Air Force is research into human behavior and how we perceive location and movement through space. It is important to identify and model the mechanisms by which humans process environmental cues regarding spatial orientation. Research results from this program add to the knowledge base on how humans orient themselves—important in the training of pilots and compensating for spatial disorientation.

Cognition

The goal of this program is to support research that examines the fundamental mechanisms underlying human performance. These include those processes involved in attention, memory, information processing, learning, reasoning, problem-solving, and decision-making under stress. Research on automated instruction (computers) is supported to improve the initial and ongoing training needs of the Air Force—and other services. The Intelligent Teaching program examines different training strategies using computers, under different conditions.

Neuroscience

Neuroscience supports a wide array of research which aims to understand the neural mechanisms of learning and memory, fatigue, stress, and attention. The psychobiology of stress, and how to regulate it, are of particular interest because of the effects of stress on performance. This includes the behavioral effects of such regulation.

ARMY RESEARCH INSTITUTE FOR THE BEHAVIORAL AND SOCIAL SCIENCES

ARI funds basic research (6.1), exploratory development (6.2) and advanced development (6.3A) programs. APA urges support for ARI's $27.8 million FY94 request. With sixty percent of the Army's total obligational authority personnel related, ARI's mission is to develop behavioral science data, technologies, and products that maximize the Army's investment in human capital and to maximize their performance and effectiveness.

Basic research in ARI

The FY94 request of $3.9 million for basic research in ARI supports research to develop the behavioral science base for more applied research aimed at improving the effectiveness of soldiers and Army systems. ARI's Office of Basic Research conducts some intramural research, with over ninety percent of its funds going to extramural research grants. This research falls into two broad areas and one special project.

Research in "Learning and Cognitive Foundations for Advancing Training Technology" adds to the knowledge base to: 1) discover the factors affecting acquisition and maintenance of skills in high-demand tasks; 2) analyze the variables involved in rapid training in foreign languages; and, 3) model/simulate processes affecting human performance, judgment, and planning. The results of this research will support more applied research to improve effective performance in land combat, the acquisition of foreign languages for communication, intelligence, and translation, and the development of effective models and simulations for battle training.

"Individual and Group Performance Processes" research is used in the development of the Army's human resources. This includes career commitment, soldier motivation in battle, and how to deal with downsizing and force restructuring.

A special project in "Human Chronopsychology" is also being supported by the Office of Basic Research. Research results from this project will shed light on those factors that effect performance under rapid deployment—such as that which occurred during Desert Storm.

"Applied" research in ARI

$23.9 million of ARI's FY94 request would go to its Manpower and Personnel Research and Development program, and its Training Systems Research and Development program. These programs were founded on the premise that a well-trained soldier is the basic element of land warfare, and that these soldiers must be trained to function as individuals or members of crews, teams and units.

The Manpower and Personnel R&D program supports the Army's move to a smaller, higher quality force. The research supported through this program is designed to help improve: 1) the match between personnel and jobs; 2) retention of quality personnel; and, 3) the development of leadership capabilities. ARI research in this area also enhances organizational design to increase productivity and support the transition to the smaller scale of the future Army.

Research for the design and use of a new generation of cost-effective simulators and training devices is supported through ARI's Training Systems R&D program. This program also investigates the principles of effective collective training in these synthetic environments.

SUMMARY AND RECOMMENDATIONS

The portion of the Department of Defense's R&D budget described above will fund basic research and development to support the needs of our armed services in rapidly changing circumstances—both domestic and foreign. Most of the behavioral science supported by DOD is used in support of the critical areas of personnel selection, training, human factors, and team performance. This will become increasingly important as DOD's personnel needs continue to evolve with downsizing and fundamental organizational changes.

Behavioral research is also making critical contributions to the user-oriented design of increasingly complex, new technologies. The human-machine interface is too often overlooked by engineers and other designers unfamiliar with the accommodations needed to optimize human performance and to ensure safe, accurate operation of new technologies.

APA urges this Subcommittee to direct full support for the fiscal year 1994 requests of the Office of Naval Research, the Air Force Office of Scientific Research, and the Army Research Institute for the Behavioral and Social Sciences—including funds for the vital 6.2 programs.

STATEMENT OF THE AMERICAN SOCIETY OF TROPICAL MEDICINE AND HYGIENE

The American Society of Tropical Medicine and Hygiene is a professional research society representing more than 2,600 researchers and practitioners dedicated to the prevention and treatment of tropical infectious diseases. The collective expertise of our members is in areas of basic science related to the developing world, and in public health, epidemiology, and medicine.

The American Society of Tropical Medicine and Hygiene is very appreciative of your support for the Department of Defense Infectious Disease and HIV Research Programs in 1993, including your restoration of the Administration's proposed cut for HIV research. We are particularly pleased by your support of the replacement facility for the Walter Reed Army Institute of Research (WRAIR). The WRAIR facility is critical to provide safe and proper housing of the Department of the Army's research—the current facility fails to meet many safety, health, and environmental standards—and to implement the coordination of Army and Navy infectious disease research. The Department of Defense forwarded its long-term plan for medical facilities to the Senate Armed Services Committee on March 12, 1993. Bids for Phase I are less than 50 percent of the dollar amount anticipated. We are pleased to learn that at a House Armed Services Committee hearing on April 29, 1993, the first question asked of Acting Assistant Secretary for Health Affairs Dr. Edward Martin regarded the status of the WRAIR replacement facility. We know this project could not have been a reality without your support in 1992, and we urge Congress to provide necessary Phase II funds in 1994 so that the replacement WRAIR remains on schedule.

The Administration has requested $55.2 million for the Department of Defense Infectious Disease research activities in 1994, approximately $11.8 million more than the 1993 request. We urge the Committee to fund the President's Request for this critical program. However, the request for DOD HIV Research Programs is only $16.7 million, which is similar to requests of previous years but far below the 1993 appropriation of approximately $70 million. The Society urges the Committee to fund the HIV research program at 1993 level. Department of Defense research in HIV and infectious diseases will become even more important as the military downsizes during the next several years. Further, the strategic importance of this research is highlighted by the current unsettled situation in many areas throughout the world, and our preparedness for infectious diseases may mean the difference between victory and defeat. For example, in World War II U.S. military personnel suffered an estimated 12 million sick days lost due to malaria, due to 605,555 reported cases of this disease.

Medical threats are changing constantly and we must be able to react quickly to these changing needs. Like other defense research, we cannot simply start-up medical research whenever we need it; rather, a certain level of continuity and preparedness is required. Recent U.S. military activities illustrate how medical research needs differ from one location to another. For example, 140 cases of malaria and 100 cases of Dengue have been diagnosed in soldiers who participated in Operation Restore Hope in Somalia (where approximately 10% of soldiers reported an illness in any given week), while a common problem during Operation Desert Shield/Desert Storm was leishmaniasis (the most recent case of leishmaniasis related to Desert Storm was diagnosed in May 1993). The leishmaniasis resulted in a moratorium on blood donations from all U.S. service personnel in that area. However, it should be pointed out that Operation Desert Shield/Desert Storm demonstrated that our military was prepared to confront a number of tropical, third-world infectious diseases. In fact, studies that had been conducted at Walter Reed led to the recognition of leishmaniasis and to its control. It is critical that WRAIR's research on the sandfly that transmits this tropical disease continue. Operations Desert Shield/Desert Storm and Restore Hope attest to the validity of current infectious disease science and technology objectives—malaria, diarrhea, Dengue, and hepatitis drug and vaccine development.

Department of Defense medical research might also play a critical role in a current epidemic in the united States. The causative agent of the Unexplained Respiratory Disease Syndrome (URDS), the mysterious flu-like illness that has claimed at least 13 lives in the American Southwest, is believed to be a new strain of rodent-borne virus related to Hantaan Virus, the agent responsible for thousands of cases of Korean Hemorrhagic Fever (KHF) and hundreds of deaths among United Nations troops during the Korean War. The U.S. military played a major role in defining KHF, including clinical and epidemiological efforts and the collection and storage of specimens that helped lead to identification of the viral agent. Hantaan, which is also responsible for over 200,000 cases of epidemic hemorrthagic fever with up to a 10% annual fatality rate in China, and the related Pummala virus, which causes endemic renal disease in Scandinavia, have been implicated in mini-epidemics in the Mediterranean during the 1980's. These and similar viruses have been found in rodents throughout the world. If the Navajo or URDS disease agent is closely related to Hantaan, there will be a large spinoff from the extensive research on hantaviruses undertaken by American military and other tropical infectious disease experts over past decades.

Despite the overwhelming need for insect-control programs, the Army has recommended, as a "cost-saving" measure, terminating the Walter Reed Biosystematics Unit (WRBU), which has been in existence for nearly 30 years. WRBU is staffed by seven personnel, including four entomologists, and its annual budget is approximately $350,000. A key component of DOD's insect-control activities, WRBU conducts laboratory and field research on the systematics of medically important arthropods in support of epidemiological studies and disease control. The complexity of vector-borne diseases requires a multidisciplinary approach to disease control, including the identification of the vectors and an understanding of their ecosystem. Further, WRBU provides critical training for DOD entomologists serving in overseas laboratories (which are discussed below) and for medical personnel from Third World countries. Approximately 50% of nonbattle-related casualties since World War II have been from arthropod-borne diseases. Two-thirds of the diseases of military importance are transmitted by mosquitoes and other arthropods, and knowledge of these species is absolutely critical to develop strategies for the prevention and control of these diseases. Under the Army's proposal, funding could cease at the end of fiscal year 1993. WRBU is a unique resource to the military community and to the scientific community (including the academic community) and its responsibilities cannot be quickly absorbed by nor transferred to a non-military agency. The American Society of Tropical Medicine and Hygiene requests that funding be sustained for this critical program in order to maintain it at DOD, while providing additional time to study the drastic proposal to terminate this unit.

The seven Department of Defense overseas medical research laboratories are the most broadly based international tropical infectious disease research laboratories supported by the United States, and they provide important opportunities for research directed toward prevention and treatment, including the testing of new vaccines and drugs in areas endemic for tropical infectious diseases. For example, at the start of Operation Desert Shield in August 1990, Naval Medical Research Unit Number 3 (NAMRU–3) in Cairo was called upon for prevention and treatment for diseases endemic to the Middle East. NAMRU–3 was also prepared to assist U.S. troops in the event that Iraq had used biological weapons. More recently, NAMRU–3 has provided services for U.S. military personnel who are participating in Operation Restore Hope. Other examples of contributions of overseas labs are the 1993 licensure of the vaccine for Japanese encephalitis, and the anticipated licensure of the vaccine for hepatitis A. The U.S. Army played a major role in developing and testing most of these vaccines. Further, the laboratories are a vital resource for recruiting and training medical personnel for the military.

A 1992 study by the Institute of Medicine (IOM) on emerging infections recommended unambiguously the continued support of the overseas research facilities, which are located in Thailand, Indonesia, Egypt, Brazil, Kenya, Peru, and Korea. The American Society of Tropical Medicine and Hygiene is concerned that some of these laboratories have been closed previously, because of insufficient funding and changes in mission priorities. We believe that additional closings could seriously jeopardize our ability to detect and respond to emerging tropical infectious disease threats, and we request that the Committee provide continued support, at a minimum, at their current level.

The Department of Defense also sponsors malaria programs. Malaria infects 270 million people worldwide and is responsible for as many as two million deaths annually. The Department's anti-malarial drug development program is unique and was responsible for bringing to licensure Mefloquine, now a major drug used to prevent and treat chloroquine-resistant malaria in Somalia. The program is in the process of developing a new anti-malarial, Halofantrine, which has great promise. The Department also conducts a crucial malaria project in Brazil. These advances benefit the military and also every U.S. citizen who travels to tropical areas. In fact, they benefit the people of those nations as well.

The American Society of Tropical Medicine and Hygiene realizes that Reductions in Force are inevitable, and necessary, as the United States continues to downsize its military. However, we are concerned that these Reductions may adversely affect the Defense Department's medical research program, including its infectious diseases research program. Infectious, and particularly tropical, diseases are the number one killer of people worldwide, and we urge you not to take short-sighted action that would undermine years of research that have helped us learn so much about these diseases.

STATEMENT OF THE ASSOCIATION OF AMERICAN UNIVERSITIES, NATIONAL ASSOCIATION OF STATE UNIVERSITIES AND LAND-GRANT COLLEGES, AND AMERICAN COUNCIL ON EDUCATION

This statement is submitted on behalf of the Association of American Universities, the National Association of State Universities and Land-Grant Colleges, and the American Council on Education. The members of these national organizations include virtually all of the universities in which the Department of Defense supports fundamental research and graduate programs in the physical sciences, mathematics, computer sciences and engineering as well as other disciplines related to its mission.

In summary, we urge that the level of investment for long-term research and graduate education remain at least constant as the Department of Defense decreases the scope of its activities, in order to adequately maintain U.S. technological superiority for the future. This statement discusses the context and importance of DOD research and education funding, offers our perspectives on several particular programs included in the FY 1994 budget request and discusses the continuing importance of support for graduate students.

THE IMPORTANCE OF DEPARTMENT OF DEFENSE RESEARCH PROGRAMS

As the DOD budget decreases, in large part due to the lessened threat of the Soviet Union, there will be a continuing need to maintain world-leading technological superiority for future weapons, and economic needs. For more than 40 years, the Department's investment in university-based research has served to underpin military technological needs, with eventual systems such as radar, sonar, the global positioning system, and rapid advances in such important fields as high speed computers and communications and advanced materials. These scientific and technological advances must continue if future defense strategy will increasingly rely more on technological superiority than on the quantity of troops or weapons.

The sustenance of the national research base for defense needs will be particularly vulnerable during the next several years as procurement of present weapons systems decrease. As major defense contracts decrease, industrial IR&D (independent R&D), which is funded as a percentage of industrial procurement contracts, will also shrink in proportion. Thus, on top of the cuts already occurring in long-term research undertaken by industry as part of the retrenchment in their commercial operations, defense contractors will also be cutting back. In order to maintain the nation's Science and Technology Base, DOD will need adequate funding to sustain its share of support.

The DOD provides critical support to the nation's science enterprise. Although the department now accounts for only about 10 percent of total Federal support for research performed at universities and colleges, it accounts for 54 percent of all federal support in computer sciences, 59 percent of support for electrical engineering and 31 percent in mathematics. In combination with the NSF, the two agencies together account for 90 percent of support for computer sciences, 87 percent in mathematics and 92 of total federal support for electrical engineering. Because federal investment in all of these fields is essential to the education of the next generation of scientists and engineers as well as the development of new technologies essential to our economic welfare and future defense, the Department cannot afford to neglect its leadership role in these fields.

DOD funding continues to reach a growing number of institutions and states. In FY 1990, 272 institutions in all 50 states and the District of Columbia received DOD funding. Over 120 institutions receive over a million dollars annually, and in 1990, 71 universities in 28 states each received more than $3 million in DOD funds.

DOD BUDGET REQUEST FOR 6.1 FUNDING

DOD proposes $1.256 billion for 6.1 basic research and education programs for 1994, an increase from the amount requested last year, but a decrease from the amount enacted. As a benchmark, this budget would be 3.3 percent of total RDT&E funding, a drop from the 3.5 percent level attained last year. We are pleased that 6.1 funding has risen from the level of 2.5 percent of FY 1990, reversing the decreases in percentages for this investment throughout most of the 1970s and 1980s. However, in 1965, 6.1 funding was nearly 5.5 percent of RDT&E. We would like to work with the committee in rebuilding this level of effort for the future.

Within the 6.1 budget category, we are pleased to note that Defense Research Sciences have sustained a steady increase, although we are concerned that the ARPA account appears to have decreased.

We particularly support the budget for the University Research Initiative (URI), which includes several programs of national interest, highlighted below:

—We understand that the URI budget is proposed to increase sufficiently to enable another round of competitive awards to establish university based research centers. This would allow work to be undertaken in specific areas of science and engineering targeted by the research agencies, such as engine combustion, electrooptics, remote sensing, nanolithography, supercomputing neurocomputers, composite materials, and environmentally acceptable disposal of toxic wastes.

—The Research Initiation Program (RIP) would also increase. This important competitive effort is designed to broaden the university base in support of defense research and to address overall science and engineering research and graduate education infrastructure in U.S. academic institutions. Only institutions that have not been major recipients of DOD research and development funding are eligible. The awards emphasize human resources but proposers are encouraged to request funding for major pieces of instrumentation as part of their awards.

—The AASERT (Augmentation Awards for Science and Engineering Research Training) would be fully funded with about $50 million. The three-year awards are designed to increase the number of U.S. citizens educated as high-quality scientists and engineers, as part of Defense-sponsored research. Each award supports one or two additional graduate students working on a DOD-sponsored research project and includes funds to augment the amount of the original research grant or contract of the principal investigator. Proposers are encouraged to use AASERT funds to recruit minority graduate students, women and persons with disabilities, all of whom are underrepresented among U.S. citizens holding advanced degrees in science and engineering.

—The DOD Fellowship Program (along with the fellowship program long nurtured by the ONR) is one of the most prestigious funded by the government. It was designed to attract some of the nation's best students into graduate programs in science and engineering and we are pleased to note DOD's continued support.

THE GROWING NEED FOR GRADUATE EDUCATION

We would like to comment further on the importance of graduate assistance programs as part of the overall national effort to increase the advanced scientific and technological skills of our workforce. DOD has contributed to making the nation's graduate programs among the finest in the world. Yet three trends, each amplified below, raise questions about the continued capacity of these programs to meet the needs of the nation:

—The proportion of Ph.D.s granted by our universities that go to U.S. students has been declining for over two decades,

—Despite their rapid increase as a proportion of overall workforce, minorities and women remain underrepresented in doctoral programs as well as in most master's and professional programs, and

—Current trends in Ph.D. supply and demand may result in shortages of Ph.D.s beginning in a few years and extending into the next century.

Declining proportion of U.S. citizens earning Ph.D.s

In 1961, U.S. citizens earned 85 percent of doctorates granted in science and engineering by U.S. universities; by 1991, it had dropped to 62 percent. The figures are worse in particular fields—the percentage of doctorates awarded to U.S. citizens in the physical sciences dropped from 78 percent in 1979 to 60 percent in 1991, for computer and information sciences, from 79 to 49 percent in this period, engineering overall from 53 to 41 percent, and electrical engineering from 57 percent to 41 percent.

Some critics have charged that our graduate programs are preferentially recruiting foreign students because they often provide their own funding. But a recent study by the AAU/AGS Project for Research on Doctoral Education documented that many departments preferentially admit U.S. students to their programs, despite available entry data suggesting that foreign students, as a group, were often better prepared for graduate study. However, the capacity of preferential admissions strategies to increase the percentage of U.S. Ph.D. recipients is severely limited by the applicant pool, which has nearly twice as many foreign as domestic students. A declining pool of U.S. talent has particular implications for the mission of DOD, in that a portion of DOD science and technology activities is limited to U.S. citizens.

Efforts to increase the number of U.S. students enrolled in doctoral programs can be substantially enhanced by the provision of fellowships and traineeships, which are an effective means to draw talented U.S. students into doctoral programs and away from other, often more lucrative options available to them.

Underrepresentation of minorities and women

The underrepresentation of minorities and women has been one of the most intractable problems in graduate education. The proportion of women receiving doctoral degrees has steadily increased for three decades but remains low in the physical sciences and engineering. With the exception of Asians, minorities remain severely underrepresented in doctoral programs. From the mid-1970s through the late 1980s, the number of black Ph.D.s actually declined, and the decline in black male Ph.D.s was especially sharp.

However, we may finally be seeing some substantial, sustainable advances. In 1991, women earned their highest number ever, representing 37 percent of Ph.D.s granted. Among U.S. citizens only, women earned 44 percent of 1991 Ph.D.s.

For minorities, 1991 data provide evidence of a continuing turnabout in minority Ph.D. recipients that began to appear in the late 1980s.

These increases in earned doctorates can be traced to increases in enrollments in the early 1980s and show what concerted efforts by universities, aided by effective federal programs, can accomplish. It is important to continue the investments that produce such critical results.

Projected shortages of Ph.D.s

There has been a good deal of public debate about the prospect of shortages of Ph.D.s at the end of this decade and continuing into the next century. Projections on such a scale are always inexact, and some unanticipated factors such as the end of the Cold War and the severity of the recession may ameliorate any shortages. But the basic factors that have caused concern still remain:

—The extraordinary increase in faculty hiring in the 1960s will surely be echoed by an increased rate of faculty vacancies beginning in just a few years,

—An increase in enrollments at the end of the decade will be produced by students who are already in the system,

—Because industrial employment of Ph.Ds can help strengthen our competitive position in the global marketplace, it is important to resume the steady growth experienced before the recession.

STATEMENT OF THE ASSOCIATION OF CIVILIAN TECHNICIANS

Mr. Chairman and members of the Committee, on behalf of the proud men and women who are employed as Civilian Technicians in the National Guard and who also comprise the Association of Civilian Technicians [ACT], I appreciate this opportunity to again appear before this Committee and present our views on the state of the full-time National Guard support program. I also would like to express our sincere appreciation and gratitude for your continued support of our program.

For years ACT representatives have presented to this Committee our objections, concerns and recommendations regarding a program that we, to this day, believe presents a far greater detriment to the National Guard full-time support program than it does a benefit. The program to which I am referring is the Active Guard Reserve, also referred to as the AGR program.

The seed for the AGR program was planted in 1975 in the DOD Appropriations Act of 1975 (Public Law 93–365), where Congress directed DOD to use the least costly form of manpower. In its report to Congress in 1976, the Defense Manpower Commission concluded that $270 million could be saved annually by replacing all Army and Air Force reserve component technicians with Guardsmen and Reservists who would be on full time active duty.

In 1977, a comprehensive review of the full-time National Guard support program was conducted by MG Francis Gerard, former Adjutant General for New Jersey. The "Gerard Study" recommended that the Civilian Technician program be retained. Ignoring the suggestions made in this study, an AGR "test" program was started anyway. Today, with hindsight, we can see the wisdom contained in the recommendations of the "Gerard Study."

Throughout the years since this AGR "monster" was born, numerous reports have been produced by diverse government agencies and private-sector management consulting firms which show the folly in the determination that Civilian Technicians in the Guard and Reserves can be replaced by active-duty personnel. These studies concluded that the AGR program would not save any money and would actually prove to be more costly.

In November of 1980, Management Consulting and Research Inc., in a report to the Deputy Assistant Secretary of Defense for Reserve Affairs, stated there would be no significant cost savings in converting Civilian Technicians to AGR status. The MCR report also cited additional costs due to benefit differentials; lower military manpower availability; no measurable change to unit readiness; and no significant difference between dual status Civilian Technicians and full-time military personnel. This was the first of many reports through the years that have found that the AGR program is far more costly than the Civilian Technician program.

In 1983 the Surveys and Investigative Staff of the House Appropriations Committee reported that too many management and supervisory positions were being filled by AGRs. In 1985 GAO said that an all Civilian Technician force would be less costly than an all AGR force. The GAO also estimated that annual AGR costs would rise by over $1.5 billion between 1986 and 1990.

Negative reports continued to flow. In 1988 and 1990, GAO still found management and morale problems due to two full-time support programs, Civilian Technician and AGR, performing similar duties with different personnel procedures and different pay and benefits. GAO also determined the AGR program was far more costly.

Furthermore, the 1990 GAO report stated the AGR Unit Staffing Guides were established without sound justification and the program was so mismanaged that the requirement for 120,000 full-time personnel lacked sound justification. It also found that in most units four AGR sergeants were needed to replace two Civilian Technicians, and in units that had only one Civilian Technician, the Technician was replaced by three AGR sergeants. It is common knowledge that AGRs have very little work to occupy them for a full day.

It is naturally ACT's position that the Civilian Technician Program offers the best value for the national defense funding spent on the National Guard. Let me present you with a few facts that may not be in the Defense Department briefs you have seen.

Health benefits.—While it is true that, under the Federal Employees Health Benefit program, the NGB does not have to pay its "employer's share" for the health insurance of its AGR employees, the actual costs of the health program of AGR employees is covered in the military's CHAMPUS program and therefore never really surfaces in any cost comparisons. Technicians, however, must contribute to their health insurance plans.

Leave benefits.—While an individual entering the Technician program begins to accrue annual leave at the rate of four hours per pay period, resulting in 104 hours or 13 days off a year, an individual who enters the AGR earns 30 days off per year from day one. A Technician must be with the program for 15 years before he/she finally begins to earn eight hours a pay period, resulting in 26 days per year. This comparison does not even include allowances for an AGR receiving 24, 48, 72 or 96 hour passes. It is also important to realize that in accordance with military regulations AGRs are allowed to accrue compensatory time. In addition, AGRs receive unlimited sick leave; Technicians accumulate thirteen days per year.

Tax benefits.—Here is another area where NGB or DOD can avoid comparing the numbers because it does not affect their budgets, but it definitely costs the taxpayer more money. Quite simply, an average of 28 percent of an AGR's pay is tax free! In addition, AGRs do not pay taxes on their allowance pay.

Retirement benefits.—An AGR can retire after twenty years of service (conceivably at 38–40 years of age) and receive an immediate annuity. It is impossible for a technician to qualify for a normal retirement under the age of 50, and even then his annuity is reduced. Furthermore, Technicians contribute to retirement, AGRs do not.

When these considerations are taken into account, along with the significant wage differences between the programs that are already established as fact, then no amount of number crunching can hide the bottom line: AGRs cost more than technicians!

Recently it has become evident that DOD has realized it is losing this battle over the question of cost effectiveness. On March 5, 1993, I sent a letter to the Director of the Office of Management and Budget, concerning this same question, which was then referred to the Office of the Assistant Secretary of Defense for Reserve Affairs. DOD's response was: "Several studies over the past few years have established that many factors other than costing are involved when selecting the appropriate type of personnel to fill full-time support requirements. Certainly, however, when all other factors are equal then cost should play a deciding role."

In addition to the studies and facts that contradict DOD's and NGB's assertions, I would like to show you some specific examples of the damage and detrimental effects that the AGR program has caused and continues to cause in the full-time support program in the National Guard and Reserves.

For example, there are presently 460 Army AGR personnel on the payroll in Minnesota. They range in rank from Colonel (O6) to Corporal (E4). They occupy positions that normally would be filled by Civilian Technicians in the Range of GS 4 to GS 14. A cross section of eleven positions were used for this example with most of the positions falling into the GS 5 to GS 7 area on the civilian side that are presently occupied by Sgt. E6 to E8 on the AGR side. The average pay and allowances received by the AGR is $12,645 more than a Civilian Technician occupying the same position. Multiply this figure by the 460 AGR personnel on board in this state and we find that it is costing the taxpayer an additional $5,816,700 per year for this state's AGR program. Using this same figure, let us multiply it by approximately 26,000 AGR personnel in the country-wide AGR program and we find that this program is costing the taxpayer $328,770,000 more per year, in wages alone, as opposed to the Civilian Technician program. (See Attachment 1.)

To give you another example, in fiscal year 1992 the Minnesota Air National Guard's 148th FG, in Duluth, employed close to 110 AGRs, ten of which were officer positions. The cost of the officer positions for this year was $428,313 in wages, $120,000 in quarters and separate rations, for a total of $548,313.

The civilian jobs that the AGRs replaced were all GS–09, 10 or 11, and one GS–12. The cost of these ten officer positions alone was $150,000 more than if Civilian Technicians were in place. The wage disparity between the enlisted AGRs and Civilian Technicians was another $150,000, for a total of $300,000.

In addition, another $760,000 was spent needlessly in the 148th FG. This three-quarters of a million dollars was given tax free to AGR members. The money was provided for housing, variable housing allowances and separate rations. This money would not have been spent if these jobs were filled by Civilian Technicians.

Mind you, this is one flying Air National Guard (ANG) unit; there are 92 in the country. The number of Army units far exceeds this number. Another important point to make is that there are more AGRs, percentage-wise, in the Army National Guard than in the Air National Guard because of higher military rank and lower Civil Service Grades on the Army side.

I want to emphasize that prior to the inception of the AGR program, almost all of the employees were Civilian Technicians with the exception of recruiters.

There also are a number of cases whereby the AGR employee earns more than his supervisor. This inequity is not only unfair, it promotes adverse labor relations between the AGR and the supervisor.

In the area of medical care, the AGR program is also costly for the Guard system. In fact, it would be more economical just to pay the complete cost of health insurance for each member. Military hospitals are quite often located far from Guard bases and posts and require excessive time off and travel expenditures to receive basic medical care. To receive expanded medical care such as a specialist, an AGR may be required to travel hundreds or even thousands of miles.

I will quote you one case within the AGR program in the Minnesota Air National Guard. An E–7 had experienced some foot problems. A local doctor in Minnesota was consulted by the AGR and he was informed that surgery on the foot would correct the problem. The AGR was then sent out-of-state to an Army hospital and received the same diagnosis. The Army surgeon could perform the surgery in a month. Again, the AGR flew back commercially and waited for his surgery on the fifth day of his stay. After completion of surgery, he returned home on the same day. A follow-up visit to his local doctor was also required. Had the individual been treated in his hometown, the cost would have been approximately $2,000 including hospital and follow-up. Since the individual was treated out-of-state the cost to the taxpayer was well over $8,000, including treatment and travel expenses.

By Congress raising and funding the Army Technician floor strength by approximately 13,000 positions, the entire Army Guard AGR program, which consists of approximately 26,000 persons, could be eliminated and be realized. Based on the pay and allowances of an ET sergeant with ten years of service, about the average rank and service years of an AGR person, an additional $310 million could be recovered for a total of $750 'million in savings per year. This savings in no way would reduce the effectiveness of the Army National Guard but would easily increase its readiness.

When the AGR program was first proposed, its supposed benefits were announced with high-flown statements that now only bring a cynical smile to the face of anyone who has studied the program. The same is true of all the praise that has been heaped on it since its inception. For example, AGRs were going to be assigned to deployable units. They would then be able to improve the training level of the units and enhance their mobilization readiness.

However, when we examine the AGR program we find approximately one-third of its personnel are not even in deployable units. In some states, the percentage is as high as 48 percent. It also means that most of these AGRs are not mobilization assets. They are assigned to the State Area Commands (STARC) and have no mobilization assignment. Many AGRs receive no combat training, are not issued combat equipment and are not assigned to any combat unit.

AGRs are no more deployable than technicians have been since they became federal employees by virtue of the Technician Act of 1968. Yet for some reason, NGB continually staffs these positions with active-duty personnel, claiming all the while that it is necessary and even cost effective.

Also, when first implemented, the AGR program was supposed to provide the Reserve Components with a broad breadth of experienced personnel. It was said they would perform duties which were a departure from the traditional administrative support role performed by Civilian Technicians and provide units with personnel who had a broad range of military skills. However, quite to the contrary, the tasks that are being performed by the AGRs used to be done by Civilian Technicians.

Again, we have an act of deception when friends of the AGR program try to prove its necessity. For years they have tried to demonstrate that AGRs are a special group of employees, separate and apart from Civilian Technicians. No amount of deceptive arguments can alter the fact that this claim is simply untrue.

In order for this Committee to verify what it is that AGRs are expected to do on a day to day basis, it need only examine the published AGR job descriptions. After having done so, it would be beyond comprehension for anyone to continue any belief in the deception that AGRs do work that is unlike that which has been done by Civilian Technicians. AGRs are nothing more than a redundancy who do work that, historically, was the sole province of Civilian Technicians.

I also would like to stress that only Civilian Technicians are permitted to work in the maintenance shops of the Army National Guard. AGRs are virtually non-existent in the maintenance shops. It has been said that one reason for the AGR program was to provide well-trained, highly skilled personnel who would be needed to deal with the new and complex equipment entering the Army's inventory.

However, when a new piece of equipment enters the Army National Guard inventory, it is Civilian Technicians alone who encounter it first. It is they who perform the necessary technical inspection before any equipment is accepted for use. Further, if any equipment needs major repairs or maintenance, a Civilian Technician does it.

Without fear of contradiction, it can be said that Civilian Technicians are far more valuable to the Army National Guard than are AGRs. For, not only can Civilian Technicians match AGRs job-for-job in the administrative area, it is they alone who keep the equipment up to standard, without which no unit could enter battle. This was highly proven in the Gulf War.

The AGR program has been controversial ever since it came into being. DOD, however, perpetually justifies not only a continuation of the AGR program but has actually convinced members of Congress to increase its size. Despite the overwhelming evidence to the contrary, DOD and National Guard Bureau officials continue to espouse the position presented in a few select reports that contain statistics which can be interpreted as supporting their contention that the AGR program is not only viable but even has some benefits and advantages.

Today, the actual expense of the AGR program costs the American taxpayer in the neighborhood of $750 million annually. This figure represents how much money could be saved per year if the AGR program was terminated and reverted back to Civilian Technician positions. This, ladies and gentlemen, is a lot of money—a quarter of the amount needed for President Clinton's "jobs" bill. And, best of all, taxes don't have to be raised to obtain this money.

Let me focus on just one more point. Today we see a new generation of Guard and Reserve recruits. Young men and women who, in ever increasing numbers, are seeking placement in this nation's ready reserves. They have seen no active duty and, lately, see no hope in aspiring to a career in the active-duty military, yet they desire to serve their country and their community.

Since the seed of independence first began to flourish in this country it has been the citizen soldier, the Minute Man, who has been lionized in history because of his or her willingness to serve this country whenever called upon, regardless of personal hardships. Replacing these Civilian Technicians, these citizen soldiers, with active-duty personnel not only defies the traditional definition of National Guard personnel but neutralizes a large share of the savings realized by the Defense Department drawdown.

In short, it makes no sense what-so-ever, in this time of significant defense budget shortfalls, to continue with an active-duty program in the reserves while drawing down the full-time military forces. The National Guard Technician Program has proved itself over and over again since 1968 and continues to do so today. It is a cheaper program and yet it offers the same availability and mobility that NGB and DOD seem to prefer in an AGR program.

I am sure that you members of Congress, as well as those of us in the Technician Program, would like to see some "real time" comparisons of the two full-time support programs in the National Guard. We are confident of the results of such a truthful and in-depth study. We do not, however, believe that the Guard Bureau nor the Defense Department can be as certain of the outcome.

In conclusion, I propose the following recommendations for your consideration: (1) Phase out the entire AGR program through attrition. All full-time support positions should become Technician positions controlled by OPM Job Grading Standards. Allow AGRs the option of applying for deployable Technician positions. (By law, all Technicians must work, train and deploy with their units.) A transfer of funds from AGR to civilian personnel accounts will be required; (2) Conduct extensive hearings on the full-time support program in the National Guard and Reserves; and (3) Incorporate the following language into the Defense Appropriations bill: "None of the funds appropriated by this Act shall be available to convert a position in support of the Army Reserve, Air Force Reserve, Army National Guard and Air National Guard occupied by, or programmed to be, occupied by, a Civilian Technician to a position to be held by a person in an Active Guard or Reserve status, if that conversion would reduce the total number of positions occupied by Civilian Technicians in those units as of the end of FY-94."

Mr. Chairman and Committee members, I challenge you to carefully study this AGR program and examine the above recommendations. I feel assured that not only will you find what I have said is true but that you will also see the effectiveness of eliminating the AGR program, thus saving the government an estimated $750 million per year. By doing so, you will also return the pride to the Civilian Technician.

That completes my statement. I would like to take this opportunity to thank you for your continued support of the National Guard and Reserves.

ATTACHMENT NO. 1

MINNESOTA ARMY—AGR PAY VERSUS CIVILIAN TECHNICIAN PAY

GS position	Military rank of person in position	Years military service	Military pay/ allowance	Technician GS step	Technician year pay	Difference
14	06	22	$82,882	8	$69,843	$13,039
13	06	22	82,882	8	59,099	23,783
10	04	18	62,667	7	36,723	25,954
7	E7	16	36,198	6	26,502	9,696
7	E8	20	41,384	7	27,259	14,125
7	E6	10	30,485	5	25,745	4,740
5	E7	10	33,789	6	21,395	12,394
5	E6	10	30,485	5	20,784	9,701
5	E5	6	26,331	4	20,173	6,158
4	E6	8	29,766	5	18,577	11,209
4	E5	6	26,331	4	18,031	8,300
Total						139,099

Note.—$139,099 − 11 = $12,645 Average × Amount of AGRs.

STATEMENT OF CALIFORNIA COMMUNITY COLLEGES SYSTEM

Mr. Chairman and Members of the Subcommittee, thank you for the opportunity to present this statement before you today regarding the efforts of the California Community College System to implement a comprehensive worker retraining program that has as its focus the conversion of the California economy from defense-based to commercial technology manufacturing and trade.

This retraining effort will be carried out through coordination between the California Community College System and the major state agencies to provide workplace literacy to a broad base of small businesses through both off-site customized training courses and a distance-learning program. The distance learning component of this effort will be carried out in large part by an established Economic Development Network (ED>Net) that has already linked 350 economic development professionals. The California Department of Trade and Commerce, Employment Development Department, and California Association for Local Economic Development have all requested to be connected to the current bulletin board. Unfortunately, the current system is at 80 percent capacity and cannot accommodate all the users. We are therefore, requesting that this Subcommittee consider our proposal for a federal partnership for program funding to support a large-scale distance learning worker retraining effort as part of the defense conversion initiative.

CALIFORNIA'S ECONOMIC PROBLEMS

As you are aware, California is in dire need of these types of programs. The economy in California has had a major downturn, resulting in significant restructuring. The most optimistic projections for significant economic recovery are early 1994. Recovery could easily be delayed until 1995 depending on certain developments. For example, in the Los Angeles metropolitan area, where 40 percent of the state's industrial base is located and which has been hardest hit by the economic downturn, economic recovery is not projected to occur until 1995.

Over the past decade, defense spending played an important role in the state's economy. The Reagan defense buildup was the largest factor contributing to the economic boom California enjoyed in the 1980s. However, defense spending in California has decreased from a high of $60 billion in 1988 to $47 billion in 1993. By 1997, it will have declined further to $37 billion. Clearly, the current cycle of defense cuts is adding to the economic woes that California is experiencing in the 1990s.

The majority of defense spending in California has been concentrated in the Southern part of the State. Contractors and military personnel in Los Angeles county receive over one-third of the statewide total. Orange and San Diego counties have also been major recipients of defense spending. Several major defense contractors are located in San Diego County and over one-third of the military personnel in California. Together, the Southern California region of Los Angeles, Orange and San Diego County account for nearly 60% of statewide defense spending. With the dramatic reduction in this part of the federal budget, it is clear that economic recovery in southern California will lag behind the rest of the state.

In addition, the recent inclusion of several San Francisco/Oakland area military installations on the 1993 Base Closing list will mean that northern California will suffer the similar economic problems as those being experienced by communities in Southern California. With the closure of the Naval Air Station and the Aviation Depot in Alameda, the Alameda Naval Supply Center and Naval Hospital in Oakland, the Treasure Island Naval Station in San Francisco, the Mare Island Naval Shipyard in Vallejo, McClellan Air Force Base in Sacramento and the Presidio of Monterey, another 56,337 jobs—a payroll of $1.78 billion—will be lost in California. And, this does not take into account other planned major and minor base realignments. The unemployment rate in Alameda County alone is projected to jump from 6.8 percent to 13.2 percent following this next round of base closings.

Finally, the recent nationwide recession has hit the California economy hard as well. The state lost 333,000 nonagricultural jobs in 1991, after adding over 260,000 in 1990. Since May of 1990, the State Department of Finance estimates that there has been a cumulative job loss of 803,000.

At the same time that these jobs have been lost, the state's population continues to grow. Between 1990 and 2000, California's population will grow twice as fast as the U.S. population to 32 million people. This growth will include both an increase in families already in the state (55%) and a huge increase in foreign immigration (44%). This meant employers will have to depend more and more upon minority entrants to the work force, many of whom are non-English speaking and unskilled and they will need language tutoring and job skills training.

There has never been another time in California's history that the need has been greater to coordinate services between major state agencies business and industry to create high wage, sustainable jobs in growth industries. Worker skills are matched with job openings. Any improvement in the overall economic health of the state will depend upon the ability to retain and convert California businesses and to attract new industry for job growth. The ability to attract industry will be dependent upon a skilled workpool as well as the economic well-being of the communities which will only be revitalized through skill maintenance and retraining programs that are keeping pace with diversifying business.

ED>NET: STATEWIDE COORDINATION

The mission of ED>Net is to advance California's economic growth and global competitiveness through quality education and services. These efforts focus on continuous workforce improvement, technology deployment, and business development.

The ED>Net infrastructure consists of coordinating support staff, program directors, regional host colleges, and program committees. It is itself an environment for innovation. ED>Net uses an extensive and growing network of partners and collaborators to bring college expertise to the state's economic development task.

The Economic Development Network facilitates the ability of community colleges to develop solid contract education programs in which businesses pay for training tailored to their specific workplace needs. The data system to capture the extent of this impact has just completed its test stage with pilot participants. It has documented that in one year 14 colleges/districts have over $27.5 million in contracts ($24 million from the Navy) in addition to the partnership programs leveraged by the colleges.

Major contracts and commitments that have been developed in 1990–1992 by the Network include:

—Over $2,267,000 in 51 California Supplier Improvement Program (CalSIP) and other Total Quality Management and related training contracts. About 50% of these were funded through the Employment Training Panel in 1991/92; 37 more are currently under development.

—$9,600,000, as part of the Integrated Solutions Systems Corporation (ISSC) contract for training Child Welfare workers over the next 5 years.

—$34,000,000 Manufacturing Technology Center funded in part by the National Institute of Standards and Technology over the next 6 years.

—Over $300,000 budgeted by Lawrence Livermore Laboratory for services to the Centers for Applied Competitive Technology in 1991/92; $700,000 is anticipated in the 1992/93 budget.

The economic development network

Provides Technical Assistance, an electronic infrastructure and In-service Training for Colleges to support the following Programs:

—Competitive Technology

—International Trade

—Environmental Technologies

—Small Business Programs

—Workplace Learning Resources

—Contract Education: 46 colleges assisted, 13 in the establishment of operational contract education programs, plus 20 training sessions at various conferences. Currently more than 50 colleges have strong contract education programs to meet the needs of local businesses for customized quality training of their workforces.

One-stop information and service access for business/industry/agencies

The use of the toll-free 800 number links specific requests to appropriate local community college resources such as air conditioning training in Ventura County, diesel technician training in 9 locales, supervisorial training in rural field offices, certificate program in surveying in 3 locales, and CalSIP training for 683 companies.

Cross pollination of information and delivery strategies across the initiatives

Programs serving clients in one area draw on resources from another. Small Business Development Centers draw on the expertise of the environmental technology and international trade groups. The Applied Technology Center uses environmental expertise for improved manufacturing solutions and their workplace learning resources are used for companies with ESL and other needs. Contract education provides delivery mechansims for environmental technology workshops.

Use of shared resources and expertise

—Committees in each of the focus areas develop and share products such as curricula, training videos, handbooks, resource development, and marketing strategies.

—Business and industry representatives provide expertise on these committees and assist in development and problem-solving activities.

—Lists of resource personnel for specific kinds of technical assistance and workshops make these tasks easier.

—Products for use by local community college practitioners have been developed centrally, such as curricula and training materials, a Video of Professional Sales Skills and Presentation Transparencies.

Marketing and communication of successful practices and highly specialized types of information such as

- —Newsletters, conferences, workshops, for expansion, start up, problem solving.
- —Database access for environmental and international trade assistance.
- —Electronic Bulletin Board networking of advisors and programs.
- —Video tape: "Contract Education: Chartering the Course for California."
- —Manual: "Developing Contract Education: A Comprehensive Handbook for Community Colleges."
- —Liaisons with and presentations to major workforce training and economic development organizations and professional groups, such as the National Employment and Training Association, U.S. Department of Labor, American Society for Training and Development, and the Employment Training Panel.

Development of models of cooperation and resource leverage

- —Review needs and opportunities and devise strategic initiatives to address them, including resource development and technical support.
- —Devise and test programs and curricula for impact and appropriateness.
- —Develop major proposals for training, model contract for Employment Training Panel work.
- —Provide seed money and resources for major project development, such as instructor training for California Supplier Improvement Program, Pacific Bell Contract coordination, proposal preparation.
- —Identify barriers and address them, including formulation of guidelines, review of legal coordination and policy issues.

Development of consistent training delivery for expanding statewide impact

- —Provide a focal point for organizing a consistent quality training program to meet specific statewide needs and applications, such as the California Highway Patrol, the Wells Fargo Business Banking Group, and the Department of Social Services.

Regional coordination

Assess local needs and areas for development. Encourage additional community college staff to participate in the program and benefit from its results.

Highlights of the network of programs 1991–1992

- —40,000 Inquiries and Requests for information and referral, including 1,300 from aerospace, were answered.
- —8,800 One-on-one counseling sessions were provided.
- —1,024 Workshops and classes were conducted.
- —16,650 Employees participated in workshops.
- —9,520 Companies and small businesses served.
- —24,000 Marketing information pieces distributed to business and industry.
- —10,000 Information items distributed.
- —2,000 Trade leads provided (over 80,000 transactions).
- —$11,754,464 Loan amounts secured.
- —$50 + million Export sales (yielding over 1000 jobs based on the Department of Commerce estimates of one new job for each $45,000 in exports.)

1993 FUNDING REQUEST

The California Community College program has the potential to reach thousands of people in need of jobs and job training. We are seeking a federal government investment of $12.5 million in 1993 to upgrade the capabilities of the current system. The following are objectives the California Community College System has outlined to meet the future worker retraining need in California to support this request.

The solution

- —Expand the ED>Net central operations information systems staff to support a dedicated digital communications network;
- —Expand the ED>Net telecommunications network to include other state agencies, private/public sector organizations and statewide efforts (i.e. Team California) to create an economic development delivery system for the State of California;
- —Fund the development of customized, user-friendly PC-based programs to support statewide projects and easy telecommunications access to information;
- —Fund the acquisition of hardware/software/enabling technologies to gain access to other state/federal database systems through connectivity to InterNet;

—Provide value added services to small and medium sized businesses by training/empowering the state's economic development program specialists to remotely access the myriad resources that are available through InterNet connectivity.

Proposed outcomes

1992–93:
- —Identify specific community college economic development programs, resources or services for 1,500 callers via the Call Automation System electronic match
- —Support toll free 800 line ED>Net BBS (1,200 calls per month)
- —Support toll free 800 line ED>Net central operations (900 calls per month)
- —Provide two regional telecommunications in-service training sessions
- —Implementation of an automated referral tracking system linked to the existing Call Automation System
- —Add 25 California Trade and Commerce users to ED>Net BBS
- —Add 10 California Association of Local Economic Development (CALED) board member users to ED>Net BBS
- —Provide on-going technical assistance and generate statewide economic development reports as requested

1993–94:
- —Establish link to InterNet
- —Add 400 ED>net offices to the ED>net BBS
- —Develop user-friendly ED>Net BBS program access to InterNet services
- —Add up to 280 Team California members to the ED>Net BBS
- —Add up to 100 CALED users to ED>Net BBS
- —Provide six regional telecommunications in-service training sessions
- —Provide on-going technical assistance and generate statewide economic development reports as requested

1994–95:
- —Add 100 CALED users to ED>Net BBS
- —Link 50 Service Delivery Areas and Private Industry Councils to the ED>Net BBS
- —Implement an online interactive searchable text and database system
- —Create 12 statewide team responses to business and industry retention, expansion or formation needs
- —Link to 5 state/federal database systems

1995–96:
- —Link 100 CALED users to ED>Net BBS
- —Create 24 statewide team responses to business and industry retention, expansion or formation needs

Mr. Chairman, thank you for the opportunity to present this statement.

STATEMENT OF COORS ELECTRONIC PACKAGE CO.

OVERVIEW

Government funding is needed by U.S. companies to develop and establish a manufacturing Capability for advanced ceramic packaging for electronic integrated circuits (IC's). The original patents and initial production of ceramic packaging were accomplished in the U.S., however today over 90% of ceramic packaging is manufactured in Japan. The patents for advanced ceramic packages of the 90's are again American based but U.S. companies are finding entry into this market to be difficult if not impossible due to the high capitalization cost for manufacturing and the lack of commitment for orders due to market dominance by the Japanese.

In order for U.S. companies to be competitive, improvements must be made in manufacturing processes, cost must be reduced, improvements must be made in tooling, and an infrastructure must be developed to implement and maintain a leadership position. This can be accomplished through the joint efforts of a consortium of U.S. ceramic manufacturers, U.S. tooling vendors, government laboratories, universities, and customers of advanced ceramic packages. To accomplish this revitalization funding of $100 million annually is needed for the next three years. The administration and technical direction of these funds should be controlled by the National Laboratories.

REASON FOR FUNDING REQUEST

We are in an economic war with Japan in which Japan is winning by focusing on critical advanced technologies and the ability to manufacture products using these technologies. One critical technology that has been targeted is the manufacture of ceramic electronic packages. These packages are the critical housings for micro-electronic semiconductor chips, and a building block for the industrial base for the year 2000 and beyond. The U.S. has always been the world leader in developing technologies and in fact, invented ceramic packages over twenty years ago. In the last 20 years we have witnessed a traumatic upheaval and turnover in our industrial base. The industrial base has been challenged, eroded, and now worse, some enabling technologies like ceramic packages are now controlled by foreign sources.

Approximately 95% of all U.S. weapons systems are dependent on Japanese companies for ceramic packages. Furthermore, today custom ceramic packages are required to support high performance integrated circuits. In the past, standard ceramic packages were available from the inventories of multiple vendors. Purchase of essential custom packages from foreign vendors exposes the package design. Since much of the IC architecture can be deduced from the package design, this exposes leading U.S. IC technology to our strongest global competitors at a very early stage in development.

WHAT IS A CERAMIC PACKAGE

A ceramic package is an interconnect component in microelectronic systems that provides environmental protection for the semiconductor device. It provides a means to dissipate the heat generated by the IC and provides electrical power and signal distribution to the other IC's or to the external circuit boards. The First ceramic package was invented and patented by American Lava Corporation, Chattanooga, Tennessee in the late sixties and it historically has been a low cost passive component in micro-electric systems.

The ceramic package is still a low cost element of the system, contributing less than 10% of the cost but controlling up to 50% of the functional performance. Speed, the common objective of all computing systems, is a function of the length of the metal conductors, and the insulator in which the metal is embedded. Small size, another common objective of virtually all systems, is limited by how close IC's can be mounted to one another. Both high speed, and small size make the removal of unwanted waste heat a major problem in package and system design.

Ceramic packaging is unique in its ability to address all of these requirements. To improve speed and reduce system size, electrical components can be mounted on both sides of a ceramic package. Only ceramics, which provide up to one thousand times the thermal conductivity of organic circuit boards, can support this high interconnect density. At the same time, ceramic packages can also provide the inert operating environment required for reliable IC performance.

COMMERCIAL APPLICATIONS

Commonly known commercial systems where ceramic packages are the key enabling technology include:

—Intel's new 486 microprocessor is driven by a 168 pin grid array package of which 90% are produced in Japan by Japanese manufacturers.

—Digital's recently announced a 21064 microprocessor which implements the new 64-bit RISC computing architecture. The enabling component is a 432 ceramic pin grid array package, of which 100% are produced in Japan by Japanese manufacturers.

—The Texas Instruments high density T.V. technology announced in the Wall Street Journal 6/10/93, is driven by a state-of-the-art AIN ceramic package. The AIN technology developed by Dow/Coors still provides an opportunity for a U.S. source for this new industry. Coors is working closely with T.I. to provide quick turn prototype packages.

DOMESTIC DEPENDENCE

This problem of domestic ceramic package availability is so severe that the U.S. Semiconductor Industry Association (SIA) in a February 1, 1993 statement to the U.S. Department of Commerce Section 232 investigation team on ceramic package availability, urged the U.S. government to refrain from imposing import restrictions on foreign supplied ceramic packages. Their quoted position is "Ceramic packages are an important component for the U.S. microelectronics industry, and therefore for the U.S. economy. The imposition of any sort of import restriction, mandatory content quota trade remedy, or any other similar type of remedy would have an impact on the costs and availability of ceramic packages used in both military and commercial programs. Implementation of a mandatory content quota would be prohibitively expensive and would not actually achieve the goal of ensuring a domestic supply of all ceramic packages used in military products." This position emphasizes and indicates that the level of dependence on foreign sources is so high that semiconductor houses fear that a cutoff of the foreign supply of packages would cripple their operations. This underscores the need for a strong domestic package source in order to protect our semiconductor industry.

While import restrictions have been suggested as a potential remedy, the correct solution is to aid the U.S. ceramic industry's return to a world competitive position.

THE OPPORTUNITY

In Transforming The Decade, A. Pollack identified packaging as "one of the ten critical technologies for the advancement of mankind". As stated previously, the ceramic package was invented in the U.S. and commercialized by several U.S. companies in the early seventies. This manufacturing base was eroded and today is almost completely dominated by three Japanese companies whose emergence was fostered by a Japanese national focus on controlling critical technologies.

More recently, technological breakthroughs have been made by U.S. companies in ceramic materials and materials processing, and proprietary patent positions have been regained. These developments, combined with the new demands created by high density IC chips, provide the U.S. industrial base with a "window of opportunity" to re-enter and regain control of this global market.

THE FUNDING PROBLEM

Advanced ceramic packages have been recognized by DOD as a critical enabling technology for all defense systems. In early 1992, a tri-service team headed by Wright-Patterson A.F.B. initiated BAA–92–02 to further the U.S. capabilities in manufacturing technology for electronic packaging. Late in 1992 Congress withdrew the previously approved funding for this and several other BAAs. In February 1993 MST held a conference on advanced ceramics and microelectronics. At that conference NIST indicated that electronic packaging was critical to the national security. Dr. Gary Denman, Director of ARPA, in his opening remarks as a witness to the House Subcommittee on Defense Appropriations, on March 19, 1992 stated that microelectronics will serve as the building blocks for information technology for many years. In his request for ARPA funds for fiscal year 1993, he particularly emphasized the need to fund electronic packaging for critical defense systems. Funds were appropriated for microelectronics in the 1993 budget but were not earmarked for ceramic package development. Hence again funding was not available for this vital dual use U.S. industry-Ceramic Packaging.

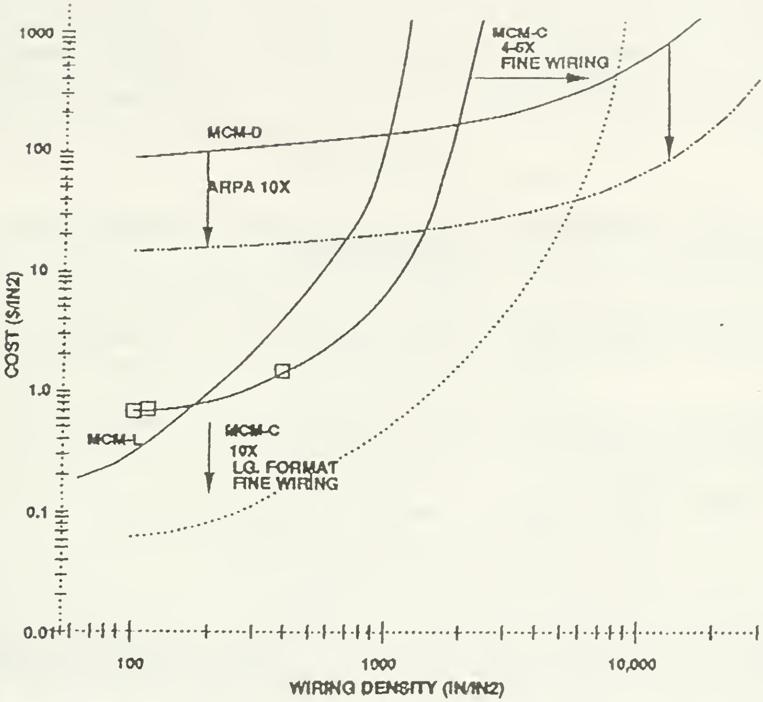
Examples of BAA proposal submitted to accelerate U.S. ceramic package competitiveness:

TABLE 1

BAA No.	Prime	Objective	Status
93–05-AAKE.	Coors Electronic Package Co.	Improve manufacturing technology for electronic packaging. Hot pressing.	Being evaluated.
93–25	Coors Electronic Package Co.	Manufacturing technology large area cofired ceramic substrates for MCM and flat panel displays.	Being evaluated.
93–25	Florida International Univ.	R&D for mixed mode applications of cofired AlN MCM–D.	Being evaluated.

FIGURE 1

COST COMPARISON FOR MULTICHIP MODULE (MCM) TECHNOLOGY OPTIONS



SOURCE: ARPA ASEM Conference

MLC Packaging Consortium, 6/28/93, P. Ludlow

MCM–D is manufactured from Deposited films. These interconnect circuits are manufactured by using IC technology from materials such as copper and polyimide.

MCM–L includes Laminate manufacturing techniques such as printed circuit boards of etched copper conductors and epoxy-glass dielectric.

MCM–C is manufactured with cofired multilayer ceramic technologies. Ceramic dielectric options offer lower cost, matched expansion, improved electrical performance and thermal conductivity 10 to 1000 times better than the organic alternatives.

BAA No.	Prime	Objective	Status
92-02	Coors Electronic Package Company	Manufacturing technology for availability of ceramic packages. DLA.	Approved funding rescinded by Congress
92-02	Honeywell	3D high density packaging.	Awarded Coors subcontract.
92-02	Hughes	Ceramic SEME board development.	Approved funding rescinded by Congress
92-02	Hughes	Composite AlN Low K package development.	Approved funding rescinded by Congress
BAA 93-05 AAKE	W. R. Grace Co.	High density microwave packaging for next generation phased array radars.	Being evaluated
BAA 93-25	Coors Electronic Package Company	MCM-C modules for commercial and military computers.	Being evaluated
BAA 93-25	Coors Electronic Package Company/ Dow	AlN manufacturing technology for low cost packages.	Being evaluated
BAA 93-25	Coors Electronic Package Company	Large area manufacturing processing for lower cost high density packages.	Being evaluated

THE PROBLEM/THE NEED

Although the inherent advantages of ceramic co-fired materials for electronic packaging are well known, the opportunity for dramatic improvements in the technology is not appreciated. Figure 1 shows a cost comparison of the material/technology options available for manufacturing multichip modules (MCM's). The solid lines represent present volume selling prices plotted against the available interconnect density. The dotted lines represent projected cost decreases resulting from processing in larger high density format, and from improvements in manufacturing methods. As can be seen from the curves, ceramic is presently the lowest cost process for high density interconnection. This is one more reason why it is the material of choice in advanced computers, both in this country and in Japan. Although ceramic technology is mature in some respects, the dotted cost projection shows an order of magnitude improvement can realistically be achieved with proper funding support and development.

In addition to the inherent electrical, thermal and mechanical properties of ceramic packages, they provide high reliability, low cost interconnections compatible with the most demanding service environments. These properties allow ceramic single chip modules (SCM's) and MCM's to provide a total packaging solution, encompassing I/O, power distribution, device attachment, signal wiring, encapsulation, and thermal management features.

Ceramic co-fired technology can therefore satisfy both commercial and military applications. Ceramic multichip modules (MCM–C's) provide an ideal solution in microwave and advanced telecommunication applications, as well as commercial displays, and sensors. Extendability of ceramic technology has been demonstrated with large MCM's having high wiring densities. Some have employed specialized ceramic formulations to minimize electrical loss, maximize thermal conductivity, or closely match the thermal expansion of the chips mounted on or within them.

The cost effective and extendability of ceramic technology from SCM usage into MCM's, is dramatically underscored by the current focus on MCM–C activity by our Japanese competitors. Kyocera, Fujitsu, Hitachi, Toshiba and NEC have all recently announced MCM–C applications for computers, including PCMCIA cards. Ceramic foundries in Japan are expanding to accommodate both increased SCM demand and MCM activity.

In the single chip module market, Japanese manufacturers hold 92% of the industrialized world's non-captive market (which excludes IBM), led by Kyocera with a 67% share. Much of this market dominance was gained by way of MITI funding and intense industry cooperation in the early 1980's. Now, having grown to market dominance and high capacity, the Japanese SCM-makers are able to effectively eliminate non-Japanese competition through price undercutting, while dividing the market among themselves. In light of the current situation, it is ironic to note that U.S. manufacturers were the original leaders in ceramic manufacturing.

Today, U.S. manufacturers can achieve equivalent or superior wire density, quality, and electrical performance, but have difficulty in matching the Japanese prices due to volume, productivity, and infrastructure considerations. Government funding is critical to rebuilding this manufacturing infrastructure.

ACTION ALREADY TAKEN BY CONGRESS

Congress has funded such acts as the Defense Conversion Reinvestment and Transition Assistance Act of Fiscal Year 1993 which addressed the overall issue of U.S. competitiveness. The proposed mission for this act according to the Source Program Information Package for Defense Technology Conversion ARPA dated March 10, 1993 was "to stimulate the transition to a growing, integrated, national industrial capability which provides the most advanced, affordable, military systems and the most competitive commercial products. TRP programs are structured to expand high quality employment opportunities in commercial and dual-use United States industries and demonstrably enhance U. S. Competitiveness".

While the intent of the 1993 Conversion Act was on target, the act falls short in two critical areas. The funding available is not adequate to address the needs to enhance and regain U.S. competitiveness for future and existing dual-use industries. Secondly, the act fails to recognize that all industries and technologies are not of equal importance. A few critical technologies will lead the industrial nations into the twenty-first century and provide a dominant position in world defense and trade—namely microelectronics.

At stake today are entire industries and world domination for the production of high resolution T.V., portable electronic cellular phones, computer work stations, and commercial satellites. All these systems require state of the art ceramic packages. To ensure that U.S. companies can compete in these key markets, the National Laboratories should be given the opportunity to fund manufacturing technology for the American ceramic package industry. To achieve this, Congress must earmark funds for ceramic manufacturing technology development.

PAST PRACTICES

While Congress has recognized that the U.S. must be competitive in semi-conductor manufacturing and has appropriated hundreds of millions of dollars to support this dual-use industry, no funding has been approved for the critical enabling ceramic package technology. Packaging and IC technologies are closely linked and cannot be strategically separated. The Japanese have 50 percent market share for semiconductor chips, but they have 90 percent of the total, commercial and military ceramic package-market. Unless both industries are viable for American companies, we will not have a reliable microelectronic industry for either defense or commercial growth. In November of 1992, due to the national security concerns, Coors brought this issue before the Commerce Department and filed a Section 232 petition on behalf of the U.S. ceramic packaging industry due to the national security implications.

THE MARKET/JOBS

The growth in electronic packages is estimated to be one of the highest of all electronic semiconductor components. The sales growth for electronic equipment and the semiconductor devices that are used in electronic equipment has been between 10% and 20% per year for over 20 years. From 1992 to 1997 worldwide electronic equipment sales are expected to grow at 8% per year, while worldwide semiconductor sales are estimated to grow at a rate of 13% per year. Growth continues to be driven by the demand for products such as phones, laptop computers, video phones, location finders, workstations, and high definition television. All of which require semiconductors with increased power in less space with less weight. Much of the projected growth in IC's will be in high end products which require the performance of ceramic packages. Therefore ceramic packaging will grow at a faster rate than the IC's. Thirteen percent per year projection.

Part of the enabling technology that has allowed the electronics and semiconductor industries to achieve continuing improvements in computing and communicating power has been the improvement in the materials available to build semiconductor devices. In 1992 electronic systems sales worldwide were $595 billion and semiconductor sales were $74 billion. Semiconductor material sales, which includes packaging materials, were $9.7 billion for the same period. Semiconductor materials are expected to increase from $9.7 billion to $10.3 billion in 1993, while electronic systems will go from $595 billion to $640 billion in 1993 of which $243 billion is expected to be produced in North America. The market segments of computer (43%), consumer (25%), communications (13%), and industrial (11%) make up most of the 1992 semiconductor sales worldwide. By controlling the $9.7 billion in materials, the Japanese can continue to dominate the overall world market and deprive the U.S. of thousands of industrial jobs.

Ceramic packaging is a growing technology with an opportunity to not only reduce costs and improve flexibility for current programs through process extensions and progressive manufacturing alternates, but to insert into emerging technologies as the most reliable packaging alternative at the lowest available cost.

The IC device heat dissipation will continue to increase with increasing device power levels and circuit density at the same time that the electronic equipment shrinks in size and weight. Device packaging materials themselves, without aid of liquid cooling, forced convection, or heavy heat sinks, will be required to remove heat from integrated circuits and multichip modules. Ceramics is the material of choice for meeting these requirements.

To further push state-of-the-art, materials such as Aluminum Nitride (AIN) are required. AIN is a ceramic material that has a thermal conductivity that is ten times that of alumina (the standard ceramic packaging material). The U.S. is again fortunate that basic research by companies such as W.R. Grace & Company and Dow Chemical Company have given the U.S. a proprietary lead in this new ceramic material. This lead will be lost like so much of our technology unless we can transfer the concepts to job producing manufacturing lines.

FOREIGN COMPETITION THEIR FOCUS

Japan continues to focus on ceramic packaging as a key enabling technology. They already have broad experience with aluminum nitride for electronic packaging as witnessed by the fact that over 11 electronic/semiconductor companies, such as Fujitsu, Toshiba, Hitachi, and NEC have commercial products using AIN packages. However, commercialization of AIN in the U.S. is beginning at Motorola, Texas Instruments, Hughes, Rockwell, IBM, Delco, AT&T and elsewhere. Commercialization of AIN in Japan and the U.S. has been slowed by the high relative cost of AIN compared to other thermal management solutions.

Toshiba has stated recently that by 1994 they believe the cost of AIN packages will be reduced to 1.2X that of alumina. Kyocera and NTK indicate that if AIN packages can be sold for 1.2X to 1.5X the price of alumina packages, AIN can replace a significant portion of the alumina package market. A market study by BPA (Technology and Management, Inc.) on the global market potential of aluminum nitride powder for both single chip and multiple chip electronic packages estimates that the AIN powder usage will grow from 126 thousand lbs. per year now, to 4.65 million lbs. in 1996 and 18.8 million lbs. by 2001.

U.S. TECHNOLOGY FOCUS

An example of the cost effectiveness and performance enhancement that is possible with advanced ceramic packages is a current proposal submitted by Coors to ARPA BAA–93–25. If funded, the revolutionary aluminum nitride package technology would demonstrate feasibility by enhancing the performance of ARPA's Militarized Touchstone Program. Furthermore, the AIN MCM–C technology that would be developed is applicable to any high power computing applications including high-power commercial workstations, scalable processors, space-based computing, etc. Specifically, by developing this AIN MCM–C technology at least one level of interconnect, two adhesive interfaces, the Lockhart liquid cooled plane, and four high density interconnect (HDI) substrates present in the current Touchstone processor design are eliminated, thus improving thermal performance, reliability, reducing weight and component costs.

In another advancement in technology Coors/Dow have identified the opportunity to develop low cost AIN powder and packaging processing that, when developed, will enable U.S. based ceramic package manufacturers to reposition this industry for global competition in high performance single and multi-chip packaging. This competitive edge is now clearly held by the Japanese.

To achieve these package volumes, cost reductions in AIN processing and powder will be required. Dow and Coors have the technology to address both areas of cost reduction. Support by ARPA through BAA–93–25 has been requested to accelerate the commercialization of AIN, to enhance the manufacturing process, and to reposition U.S. ceramic package manufacturers to compete on a global level.

As stated previously, Japan has broad experience in advanced AIN packaging, however, to date, few if any of these state-of-the-art AIN packages are being offered in the U.S. Recently, Kyocera (the leading Japanese company) declined to quote a critical AIN package for a black DOD program. Coors responded to this quote, and was awarded the contract. This underscoring again that without a viable domestic manufacturing capability, our weapon systems will not have access to cost effective ceramic packages and the most advanced technology.

SUMMARY

The national security of our country cannot be maintained when all weapons systems are dependent on a critical component controlled by foreign sources, namely the ceramic package. Neither can the U.S. maintain its industrial base and global competitiveness without a manufacturing infrastructure for ceramic package fabrication, which is a strategic component to the IC industry. The best way to create new, high-quality jobs and spur growth in the national economy is to speed the commercialization of U.S. advanced technologies. The issue is jobs and national security, the basic needs of all U.S. citizens.

CONGRESSIONAL ACTION REQUESTED FOR FY 1994

Recommendations

We strongly support the six recommendations developed by SACMA and USACA (see attached) for advanced materials—the broad classification for electronic ceramic packages.

These recommendations, while critical and essential to our national economy and defense, do not focus on the urgent need to restore the U.S. electronic package capabilities.

Hence, we offer the following specific recommendations.

- —Direct and provide funds for the DLA to develop a domestic supply base for ceramic packages for existing military systems. A funded program similar to the format proposed in BAA–92–02 is recommended.
- —Develop a program similar to Sematech that seeks to create an environment for low cost flexible state-of-the-art ceramic package manufacturing.
- —Provide funds for this program of not less than $100,000,000 annually. Unlike the semiconductor industries which have been extensively funded for over twenty years, funding to the ceramic package industry has been nil. Furthermore, due to Japanese targeting and U.S. government's lack of action, this market is now 90 percent controlled by the Japanese. Thus, matching industries funds from the few remaining U.S. manufacturers is not a reasonable remedy.

We propose that this ceramic package effort be directed by the National Laboratories such as Sandia, New Mexico or Oak Ridge, Tennessee or both where an in-depth infrastructure for technology development in materials and manufacturing already exists. By utilizing existing DOD technologies and expertise in combination with the remaining U.S. industrial know-how, we can establish a reliable domestic supply and leap frog the Japanese to regain the leadership in creating the world's most cost effective, performance driven microelectronic systems.

Recommendation one

Use Advanced Materials Technologies as Building Blocks for the Nation's 21st Century Infrastructure. To build a 21st Century infrastructure, the Administration and Congress should support advanced materials programs to: 1) increase auto fuel economy and decrease noxious emissions; 2) increase the safety and service life of new and existing bridge structures; 3) maintain preeminence in commercial aircraft; 4) improve the efficiency of U.S. industry; and 5) ensure a U.S. lead in the advanced electronic materials industry.

Recommendation two

Provide Short Term Financial Relief that Recognizes the Capital Intensive Nature of the Advanced Materials Industry and Encourages Users to Adopt Technology More Quickly. To ensure a U.S. lead in critical technologies, the Administration and Congress should: 1) create tax incentives to encourage investment in the research, development and purchase of advanced materials and components; 2) adopt trade policies that will allow U.S. companies to compete more openly in foreign markets; 3) overhaul policies that burden companies doing business with the federal government; and 4) reform antitrust laws.

Recommendation three

Refocus and Realign Federal R&D Budget to Stimulate Commercial Adoption and Production of Advanced Material Products. To stimulate commercialization, the Administration and Congress should support: 1) advanced materials demonstration, insertion and manufacturing technology programs; 2) DOC Advanced Technology Program advanced materials projects; 3) Defense Production Act Title III advanced materials programs; and 4) increased industry participation in the formulation of federal advanced materials policy.

Recommendation four

Promulgate Policies which Facilitate Formation of Productive, Market Driven Partnerships between Government Research Labs, Universities and Business. To increase the effectiveness of government/industry partnerships, the Administration and Congress should: 1) adopt risk-based cost sharing requirements; 2) simplify government contracting process; 3) change the Federal Advisory Committee Act to encourage industry/government consultation; 4) modify intellectual property requirements to attract greater industry interest in government programs; and 5) assist in the development of advanced materials standards data bases.

STATEMENT OF THE CONSORTIUM FOR INTERNATIONAL EARTH SCIENCE INFORMATION NETWORK

Mr. Chairman, thank you for this opportunity to present testimony pertaining to the Strategic Environmental Research and Development Program (SERDP). My name is Roberta Balstad Miller, and I am currently serving as the President and Chief Executive Officer of the Consortium for International Earth Science Information Network (CIESIN, pronounced "season").

CIESIN is first a national, non-profit research and applications consortium of six universities and a research institute, including the University of Michigan, Michigan State University, the University of Maryland at College Park, Polytechnic University of New York, Saginaw Valley State University, Utah State University, and the Environmental Research Institute of Michigan. CIESIN was established in response to a congressional initiative to facilitate access to, the use of, and understanding of global change information worldwide, with an overall focus on the human dimension of global change.

CIESIN is foremost an agency-neutral program that specializes in the access and integration of Earth and human science information across agency missions and scientific disciplines. CIESIN is privileged to be fulfilling this congressional directive through the continued support and vision of our Department of Defense, the National Aeronautics & Space Administration, the US Environmental Protection Agency, the US Department of Agriculture, and the Office of Science & Technology Policy.

The CIESIN initiative was created by Congress in 1989 to exploit advanced distributed-network technologies that enable the linking of diverse data and information sources into a single, transparent, "digital library." CIESIN contributes to the broadened U.S. Global Change Research Program, the High-Performance Computing and the High-Speed Networking Applications initiatives, and the Strategic Environmental Research and Development Program. CIESIN and its partner institutions are bringing an operational data and information service on-line and advancing vital U.S. interests in promoting mitigation, adaptation, and related environmental response technologies. I appreciate the opportunity to provide this testimony which covers five areas related to CIESIN/SERDP activities: 1) the convergence of policy initiatives; 2) the relevance to the national interest 3) the dual-use of data and information resources; 4) the broadening of project liaison and emerging need for a SERDP information clearinghouse; and, 5) technology reinvestment in the assignment of Regional Reprocessing and Distribution Facilities.

CIESIN AND THE SERDP: CONVERGENCE OF POLICY INITIATIVES

In November of 1991, the Conference Report to Accompany H.R. 2521 (Report 102–328), stated that within the funding for the Strategic Environmental Research and Development Program (SERDP) a specified amount be made "available for the Consortium for International Earth Science Information Network to jointly study and develop mechanisms for transferring unclassified and recently declassified information to other government agencies and to non government organizations involved in global environmental change research."

The current CIESIN SERDP effort, approved nearly a year after the FY 1992 funds were approved by the Congress (our FY 1992 project started in September 1992), has been geared to the development and demonstration of an Arctic Strategic Environmental Data Active Archive Resource, based on a geographic information system (GIS) and its associated, extensive data base.

The GIS will support analysis of Arctic physical processes which will provide insight regarding the impacts of pervasive environmental phenomena associated with global and regional change. This database will be used to generate prototype products responsive to identified interests of the global change and environmental research and user community. The technical objectives of this effort are to:

- —Establish a geographic information system (GIS), hereafter referred to as the "system". The system employs commercial off-the-shelf software, government off-the-shelf software, and appropriate public domain software.
- —Identify global change user requirements which would be addressed through the development and use of the Arctic GIS. Included in this review of user requirements are the interests of natural and physical scientists as well as those of social scientists—spanning the interdisciplinary needs of the human dimensions research community.
- —Identify and derive relevant data sets for entry into the GIS. This objective includes the capture and processing of raw DOD and civilian data for inclusion in the Arctic GIS.
- —Populate the Arctic GIS with data sets derived from the above activities.
- —Demonstrate the utility of the Arctic GIS by generating a subset of unique products deemed as needed by the global change community.
- —Establish an electronic, interactive query interface to the Arctic GIS and its associated data archive. This interface will support user investigation of data resources used to populate the Arctic GIS.
- —Demonstrate the Arctic GIS within an interactive query interface environment and under the evaluation of recognized scientists with the relevant domain expertise.
- —Demonstrate the educational utility of products generated by the Arctic GIS. Develop a demonstration of the derived products utilizing a specialized suite of software resident at CIESIN. This is expected to employ the multimedia learning tool referred to as "Windows on Global Change", jointly under development by CIESIN with science support from the NASA Jet Propulsion Laboratory.

The data content of the system, the unique products it can produce, and its accessibility will demonstrate the potential to the global change community, validating the utility and vitality of these data resources in collateral research and operational monitoring programs across the U.S. Government and in cooperating research institutions.

In the current project year, major emphasis has been placed on the acquisition and reduction of data, derived from DOD and civilian sources, leading to the generation of useful Arctic information products. The system is structured to support: (1) broad area investigation of Arctic ice, marine, terrestrial, and atmospheric environments; (2) directed area investigation of specific areas of high interest to global change researchers, and; (3) focused analyses of critical interest target areas using higher resolution (spatial/temporal) data inputs. The approach will culminate in the production of demonstration products of unique value to identified global change community participants. A distinguished evaluation panel of Arctic and global change researchers has been organized to evaluate and report on the data resource made available through the CIESIN/DOD project activity. Panel members' institutional affiliations range from the NOAA National Snow & Ice Data Center, the National Center for Geographic Information & Analysis, the Byrd Polar Research Center at the Ohio State University, the University of Alaska, the National Geophysical Data Center, and the Polar Programs Office of the National Science Foundation.

At the end of the first project year (FY 1992) effort, scheduled for fourth quarter of 1993, the Arctic GIS will be demonstrated. This GIS and database resource will provide users a method to investigate various Arctic oceanographic and climatic phenomena associated with global change.

By using existing technology and emphasizing a methodology which captures relevant data in the GIS, future efforts will enhance the use of the GIS for investigating: (1) point-source pollution impacts to Arctic and temperate coastal regions; (2) atmospheric phenomena associated with changes in the Arctic environment; (3) human-induced changes to the Arctic environment and its effects on indigenous species and the environment. Many of these activities have taken on added importance as we learn more of the legacy of ocean dumping in the north Pacific Ocean, including nuclear and mixed waste sites recently announced by officials of the Former Soviet Union (FSU).

We anticipate that the Arctic data resource developed in our project will provide a valuable, integrated information resource for U.S. and international investigators addressing these critical pollution monitoring and assessment challenges. Building upon the current effort CIESIN plans to augment the data and applications capability of the Arctic GIS to include the analysis of coastal regions.

Future activities will expand database entries to include point and extended pollution sources, and will include coastal bathymetric data. The information systems architecture established for the current effort is robust and will easily support this extension of GIS analysis applications. It is CIESIN's objective to develop pathfinder data products supporting the understanding of global change phenomena relevant to specific regions of the world. In the planned 1993 project, extension from the Arctic region toward broader coastal regions will address information needs of the continental United States (CONUS), Alaska, and Hawaii.

There is currently an allocation of $5.0 million in the DOD FY93 budget for the purposes of continuing the CIESIN SERDP effort. The FY93 effort will have a different emphasis from the current effort. It will perform prototype product development in parallel in numerous arenas. We are privileged to be able to work jointly with the DOD in extending this important dual-use project and look forward to broadening the scope of both the data resources and the geographical region of interest well beyond the initial year focus on the Arctic. There is a vital treasury of data on terrestrial regions of high priority to the global change, environmental, and human dimensions research programs.

With the support of the Committee and the SERDP Program Office, the second year effort (FY 1993) can be started in September of 1993, with a planned completion date of fourth quarter of 1994. An additional objective of the FY93 project is the development of a regional coastal GIS. The specific coastal region to be examined and placed in a GIS environment has yet to be determined, although the State of Hawaii and the mid-Atlantic region of the CONUS are strong candidate regions.

CIESIN places special emphasis of the value of this coastal regional focus because we believe the implementation of the Coastal Barrier Improvement Act of 1990 (Public Law 101–591) drives an information imperative which remains to be fully appreciated by the many agencies—Federal, State, and local—which have been given long-term monitoring and assessment roles and responsibilities in that recent enactment of the Public Law. It is our goal to provide that important decision-making community with a validated information resource and appropriate, associated technologies to facilitate their role in coastal management and monitoring.

Another aspect of the FY93 fiscal effort is the prototype development of a waste site GIS product. The specific waste site to be examined under this effort has yet to be determined. This determination could also begin in September of 1993, and thus may be able to be completed by September of 1994.

The FY93 fiscal effort is also expected to develop a graphical user interface that would be usable by any and all of the prototype GIS products—Arctic system, the Coastal Management system, and any subsequent georeferenced data collections integrated to address high priority decision-making needs. This is consistent with the mission of CIESIN to improve access to, and use of, environmental and global change information through the development and dissemination of common information resource analysis and network navigation tools. This will allow the user a single "user interface" by which he or she could access any of the georeferenced "information products" developed in this effort.

Finally, a key aspect of the FY93 fiscal effort is to develop and demonstrate the initial networking interoperability of the developed products and the gridded network of the DOD, linking bases around the nation that maintain dataset holdings that are relevant to the science of global environmental change, and significantly, of information resources which improve the data resources and infrastructure facilities with which decision-makers can link scientific research with the policy process—both during the development of policy and throughout the monitoring and evaluation phases necessary to achieve successful implementation

CIESIN RELEVANCE TO THE NATIONAL INTEREST

Dual-use of defense data resources and information technologies has been identified as an objective under the science and technology program priorities articulated by President Clinton. CIESIN is serving as an increasingly capable gateway for researchers to socioeconomic and health data, as well as the developing NASA Earth Observing System Data & Information System (EOSDIS) archives. This is a substantive role in the national information infrastructure. The investment initiated by the U.S. Congress and sustained by the participating Federal Agencies should, we believe, be maximized as new resources (i.e., previously unavailable defense data) are made available to the research, education, and policy analysis communities. Identifying these resources within the DOD remains a daunting task, as the value of dual-use relationships such as that manifested in the current CIESIN/SERDP project appear to be neither systematically communicated nor understood in many relevant DOD organizations.

DUAL-USE OF NATIONAL DATA RESOURCES

From its inception in June of 1990, the SERDP has envisaged a major element of the program to include data analysis and information transfer. This latter "transfer" was envisaged as operating in a bi-directional manner. First, there would be data released by the DOD for external researchers. Second, valuable data of use in DOD environmental monitoring, restoration, or pollution prevention would be accessible to the DOD for enhancement of defense environmental stewardship.

Clearly, there has been vigorous activity toward identifying and prioritizing data resources collected by DOD programs which can be useful outside of the DOD mission. Vice President Gore was among the earliest proponents of releasing U.S. Navy Sea Ice Thickness Data collected by the Navy during polar transit. This need is being met due to the foresight and the historically cooperative spirit of the naval oceanographic research community. In this instance, however, the flow of data is from DOD operational missions to external research programs.

Our relationship with the DOD through various interactions, many outside of our SERDP project relationship, has made us aware of a diverse set of data resources which could be extremely valuable to the global change research program, especially to the human dimensions component which addresses socio-economic impacts of near-term consequence—those affecting policy development and implementation. I would like to briefly provide a representative sampling of the discoveries and inquiries which the Committee may choose to consider in evaluating the potential value and long-term effectiveness of the SERDP.

By our mission and directives from NASA, under the Earth Observing System, CIESIN is charged with facilitating data and information flow to researchers, applied users, and decision-makers involved in understanding human dimensions (e.g., socio-economic, public health) aspects related to global environmental change. This role cannot be fulfilled without the development and maintenance of strong institutional and professional relations with the key national data repositories and analysis centers within the U.S. Government. One of these important institutions is the Center for International Research (CIR), housed within the Bureau of the Census, U.S. Department of Commerce.

Recently, the CIR alerted CIESIN to the existence of data resources sponsored by the Defense Systems Support Organization (DSSO) within the Defense Information Systems Agency (DISA). Our colleagues at Census underscored that the DSSO has access to extremely important data which could constitute a valuable contribution from the DOD to the global change community. For some time, the DOD has been compiling demographic information over regions within the United States, its territories, and other specified OCONUS geographical areas.

The data of interest at DSSO may include population counts and vital infrastructure descriptives and based on our discussions is held at the unclassified level. To make these data available in a format free of official use restrictions, and compatible with common geographic information systems, some reprocessing or "recasting" of data would be required. This reprocessing has not been an operational mission need of the DOD and therefore has not been in its baseline funding.

CIESIN believes the SERDP venue is the most appropriate mechanism to enable support for this recasting of data by DSSO. It is recommended that a joint CIESIN/DSSO project activity be funded to make available to CIESIN conditional access to the data of interest. Selected data holdings which are unclassified and of interest to global change researchers would be cooperatively identified by CIESIN and DSSO personnel. To date, preliminary discussions have taken place between CIESIN, DSSO, and SERDP representatives. In the law, CIESIN is prohibited from providing funding to any Federal Agency for such a project. Similarly, CIESIN could not reprogram funding from Agency A to Agency B to effect such a data acquisition. These constraints prohibit the release of crucial sub-national demographic data to dual-use objectives.

It is our understanding that the SERDP Executive Director and Council were party to the determination that the Defense Support Project Office (DSPO) should sponsor the FY project. In the execution of that charge, DSPO garnered the support of the Office of Naval Research to serve as grant oversight activity, with active participation and technical guidance provided by the Office of the Oceanographer of the Navy. We wish to commend each of these three sponsoring organizations for their leadership in shaping the CIESIN/SERDP project into a demonstrable dual-use project. Their willingness to engage with the congressional CIESIN initiative and respect the interests of the interdisciplinary global change research and applications contribution the Consortium was designed to support, through the collateral use of the significant Earth observations data collected and archived by the DOD, can serve as a pathfinder for long-term data reprocessing and dissemination.

BROADENING THE REACH OF THE CIESIN/SERDP PROJECT LIAISON

While we are appreciative of the leadership demonstrated by the current DOD organizations overseeing the CIESIN/SERDP project, we believe it is in the best interests of the overall investment in CIESIN and the SERDP that broadened liaison be established, to maximize the information resources which can be evaluated, integrated, and potentially made available for collateral use. We believe it is important the Committee recognizes that CIESIN is not at liberty to promote various organization's participation in the CIESIN/SERDP Project. Therefore, while we are acutely aware of the valuable data resources within the DSSO, we are prohibited from inviting or encouraging their participation in the CIESIN/SERDP project team. We believe this is a deficiency which should be remedied.

CIESIN recommends the Committee consider the need for a SERDP information clearinghouse which would provide a clearinghouse function for defense and allied agency data resources which support collateral use in the research of global change, environmental, mitigation, and adaptation technologies and policies. In evaluating the continuity of CIESIN/SERDP project activities in the fiscal year 1994 planning, it is recommended that CIESIN be considered an appropriate locus for such a clearinghouse. This is based on the demonstrable technology infrastructure supporting wide-area information services, distributed data directory services, information gateway, advanced high-performance computing facility, interoperability with other major USG Earth observations data and information systems, and the ongoing mission of the Global Change Research Information Office, which CIESIN is implementing for the Executive Office of the President, in compliance with Public Law 101–606. This latter capability is a clearinghouse of global change research and environmental technologies information.

The aforementioned demographic data is merely one discovery within the treasury of DOD information resources which could be effectively used in other Federal programs and by a pantheon of users—from socioeconomic researchers, to health assessment professionals within the U.S. Public Health Service, to business planners and market analysts whose commercial enterprises are evaluating the siting of new facilities abroad. There are other important data resources just beyond our reach under the current project scenario. We can do better to improve our effectiveness here. A few examples are provided.

Within the Defense Mapping Agency there exists some of the best terrestrial elevation and features data on Earth. DMA has been noteworthy in its attention to development and distribution of important global data sets for the broadest possible user base, for example, the Digital Chart of the World released in 1992 is rapidly becoming a base map in many global change geographic information systems. DMA also maintains several high-resolution data sets which are not classified, however they retain a designation of "for official use only" which precludes broad distribution for users. Similarly, some data are designated "noforn" precluding distribution to non-U.S. users. CIESIN recommends that the DOD be encouraged to review these security restrictions and consider the benefits of distributing these high-integrity data collections to improve research productivity and to foster the international cooperation which is requisite to a common understanding of global and regional environmental and economic security issues.

ECONOMIC COMPETITIVENESS

President Clinton recently directed the Department of Commerce to undertake a variety of initiatives aimed at increasing the export of U.S. environmental technologies, estimated to be a $300 billion market by the end of this decade. In another action, the President charged the Bureau of Economic Analysis with working toward the development of a revised gross domestic product calculation, accounting for the actual use and disposition of our natural resources and energy reserves. These initiatives would benefit measurably from knowledge of the substantial DOD progress in environmental technology development and deployment, and in the life-cycle management of materials, resources, and manufacturing processes. CIESIN recommends that the information clearinghouse, or an analogous capability, be assigned to work a focused project action with both the Defense Logistics Agency (DLA) and the U.S. Army Corps of Engineers (USACE).

As this Committee knows very well, DLA has extensive intellectual and practical experience with the life-cycle management of resources, a component of industrial metabolism, which comprises an important human interactions area of global change research. This knowledge area is viewed by some as foundational to the understanding necessary for development of the revised gross domestic product and national income accounting procedures. The USACE legacy is widely known and spans the important domains of pollution prevention, adaptation, waste minimization, energy efficient technologies. The Corps retains comprehensive historical data on U.S. coastal waters and inland waterways, useful in ongoing and planned regional environmental change investigations. Currently, these data are neither easily accessible nor widely known to potential users.

CIESIN continually responds to inquiries and requests for data from multilateral organizations, intergovernmental organizations, as well as U.S. and international research program offices and institutions. Perhaps the most vexing of these is manifested in the requests from our own Federal Agencies who seek data collected and maintained by other Federal Agencies. Recently, senior scientists with the Environmental Protection Agency approached CIESIN for emissions data on land masses such as the former Soviet Union and China, among others. These data are sought for programs such as the Arctic Contaminants Research Program and the Environmental Monitoring and Assessment Program (EMAP). We believe several such requests could be fulfilled if CIESIN were enabled to work with other DOD organizations, such as the Air Force Environmental Technical Applications Center which may be capable of providing atmospheric constituents data bases for the past several decades.

The existence of the SERDP information clearinghouse would enable early detection and determination of relevant extant data, so that other Federal agencies are not forced to fulfill their mission by embarking upon costly, and possibly duplicative initiatives.

TECHNOLOGY REINVESTMENT: REGIONAL REPROCESSING AND DISTRIBUTION FACILITIES

The discovery of extant data of value in collateral research programs and for the long-term monitoring of environmental policy "implementation effectiveness" is merely an initial step in making best use of national information resources. Several fora have reviewed the issue of relevant data which could be made more broadly available for researchers, among them the American Geophysical Union and the ongoing Environmental Task Force, organized in part by then Senator Albert Gore, Jr.

The discovery of valuable data resources will result in the desired cost-effective enhancement to research productivity and policy-making only if there is put in place the appropriate infrastructure to improve access to and use of these data and information resources.

Part of this infrastructure requirement appears to be a network of regional centers dedicated to the "recasting" or reprocessing of defense and allied agency data resources, for dissemination to appropriate user constituencies. This Regional Reprocessing and Distribution Facility approach seems to be logical follow on to the execution of the SERDP vision, and a prudent small-scale reinvestment of defense resources in the technical support of substantive national and international policy issues directly related to our economic and environmental well-being and our technical competitiveness—indeed, core components of our national security.

CIESIN recommends the Committee give consideration to supporting a demonstration project of a prototype Regional Reprocessing and Distribution Facility. This demonstration facility is a logical extension of the information clearinghouse, transitioning from electronic directory level services to archiving and dissemination services. We believe the congressional CIESIN initiative is an appropriate venue for such a demonstration project, given the ongoing relationship with the SERDP, the extensive multi-agency infrastructure investment in CIESIN computing, communications, archiving, and dissemination capabilities, and the clearinghouse responsibility inherent in the Global Change Research Information Office.

CIESIN infrastructure is developing in synchrony with the national information infrastructure and represents a comprehensive demonstration project in accordance with the High-Performance Computing and High-Speed Networking Act of 1993, under consideration this session in the House of Representatives. Additionally, based on preliminary technical interchange meetings with the Naval Research Laboratory, CIESIN infrastructure is technically compatible with the architecture envisioned for the DOD Global Grid, a proposed high-speed optical networking demonstration project. Designation of CIESIN as a Regional Reprocessing & Distribution Facility represents a least-cost solution to an emergent information infrastructure requirement. Exercising the high-speed Global Grid as part of the recommended demonstration project would be an important contribution to high-speed network applications—moving beyond developmental integration to limited operational capability with data and information services running concurrently with technical evaluation of the demonstration facility.

Our preliminary program planning has resulted in three budget scenarios for continued program activities in the task areas described in this testimony ($5 million, $7 million, and $9 million for FY 1994). These budget scenarios reflect incremental development activities for broadening access to data resources (information resources development and integration), clearinghouse functions (SERDP information clearinghouse), and the functionality of underlying network interoperability and dissemination capabilities (regional reprocessing and distribution facility).

CIESIN recognizes the fragility of funding for developmental projects, especially those associated with long-term research programs, such as the US Global Change Research Program. We are in a constant search for not only the dual-use of DOD resources and technologies, but the collateral use of the U.S. Government's investment in CIESIN to fulfill the complementary interests of DOD operational missions, the SERDP program objectives, and the interagency global change research and education initiatives.

I share the belief of my colleagues at CIESIN, confident that with the continuance and extension of the CIESIN/SERDP project, and the adoption of the recommendations presented here, the SERDP can mature as a watershed program in the collateral use of government resources for the public good, while at once having no adverse impact on the readiness of our military posture. I appreciate the opportunity which the Subcommittee has afforded me, in permitting this testimony which outlines our view of the context and direction which the SERDP might take in fulfillment of the vision which we believe Senator Nunn and his colleagues had in launching this bold mission for our evolving global environmental security.

Statement of the Defense Rations Manufacturing Association

Mr. Chairman, Members of the Committee, I am Daniel Weiss, Executive Vice President of Trans-Packers Services Corporation in New York, appearing today as President of the Defense Rations Manufacturing Association (DRMA). Thank you for this opportunity to briefly summarize the material that I request be inserted in the hearing record.

The subject of my testimony revolves around the U.S. field ration, the MRE, or Meal, Ready-to-Eat. Trans-Packers is a contract packager of food and non-food products for the MRE. We supply the small Tabasco hot pepper sauce bottles and beverage base powder packets for the MRE.

Laura Jansen, past President of DRMA, has presented similar testimony in previous years

Briefly, the MRE industrial base is faced with the prospects that under the terms contained in the MRE–XIV solicitation, which had a final bid submission date of May 20 and has a projected contract award announcement date of July 19, one-third of the industry will be eliminated from the MRE program. Since we are for the most part small and medium sized businesses who depend primarily on DOD MRE procurement for our livelihood, this action, an unprecedented three year solicitation of 1.8 million MRE cases for the next three years, is based upon faulty and erroneous assumptions, shortsighted planning, a U.S. field force that is not diminishing in size until the third of these three years, and an inventory of MREs whose age and condition make current reserve assumptions much less available for utilization than DOD assumes.

There is not sufficient time to Present the salient arguments and counter DOD's claims in my oral testimony. But let me include our major objectives:

—DOD's Minimum Sustaining Rate (MSR) for the MRE industry, to which we think we could live with, is 2.9 million cases;

—The difference between 2.9 million cases and the current solicitation of 1.8 million cases is about $30 million annually;

—Of the top ten "war stopper" items in DOD's arsenal, MREs will be the only severely reduced industry in 1993 and 1994;

—If a mobilization requirement occurs unexpectedly, as in Desert Storm, the industry will not be in a position to supply DOD with its needed troop support rations in the field.

We feel that $30 million, a small portion of your overall funding availability, can be found within your Subcommittee allocation to help sustain this industry through either reprogramming or defense conversion funds.

Specifically, we are requesting the Congress to do the following: (1) Take action to amend DOD'S MRE–XIV solicitation to the extent that 2.9 million MRE cases will be procured in the current and each of the next two years; and (2) Mandate DOD's compliance with the Minimum Sustaining Rate of MRE procurement at 2.9 million cases annually.

These points are more fully covered in the attachments to my statement, which I request be placed in the record. These issue papers, fact sheets, and "An Open Letter to the 103rd Congress", are part of a package that was distributed to every Congressional office and selected committees of relevant jurisdiction earlier in the Spring. We are requesting your assistance, and as constituents of our elected Representatives and Senators, to maintain this industry.

It is our understanding from reliable sources within the Defense and State Departments that the supply of MREs that were to be used for humanitarian assistance purposes has been fully utilized. While DOD does not have the principal statutory mission for international and domestic humanitarian assistance, this responsibility has evolved for DOD due to DOD's ready inventory of MREs and the Defense Department's capability, through the air wings of its service arms, to mobilize quickly and transport the MREs to remote geographic areas of need.

If the supply of MREs to be utilized for humanitarian assistance has been utilized, the need for such American assistance has not. The policy of reducing the MRE industry by one-third becomes even more "penny wise and pound foolish" in this context. We petition the Congress to step in, determine the facts, and intervene in this procurement action on behalf of sound procurement and public policy objectives.

Thank you for this opportunity to appear before the Committee.

Statement of the Electric Transportation Coalition

This written statement is submitted by the Electric Transportation Coalition (Coalition), an organization of municipal and investor-owned electric utilities, automobile manufacturers, state and local governments, and other entities that have joined together to promote the greater use of electricity as a transportation fuel. (A Coalition membership list is attached to this statement.) A major objective of the Coalition is to promote the commercialization and widespread introduction of electric vehicles (EVs), and supporting infrastructure, in the United States.

INTRODUCTION

The use of electricity in the transportation sector offers the nation the benefits of reduced emissions of airborne pollutants, particularly in urban areas, and decreased use of petroleum based fuels, thereby contributing to our national energy security. In addition, the development of electric transportation modes presents a significant opportunity to assert technological leadership for the United States in a new commercial sector. This leadership can be accomplished, in part, through the current redirection to civilian applications of technical capabilities and technologies developed in defense-related programs.

DOD INVOLVEMENT IN ELECTRIC VEHICLE DEVELOPMENT

One important element of the defense reinvestment program is a $25 million appropriations provided in the current fiscal year defense budget (FY 1993) for the development and commercialization of electric vehicles (EVs) and hybrid electric vehicles (HEVs) and associated infrastructure. This program, administered by the Advanced Research Projects Agency (ARPA), is a fifty-fifty cost-shared effort with industry or other non-federal entities contributing at least one-half of the cost of a project. Proposals were due to ARPA on June 11, 1993, and project selections will be made before the end of the current fiscal year (September 30, 1993). In submitting proposed projects, the ARPA has encouraged the organization of regional alliances or consortia thereby combining the economic and technical strengths of a geographic region and better assuring local commitment to the endeavor.

It is expected that numerous entities will organize regional consortia to participate in the program.

This ARPA-led activity is very important to the accelerated development of EVs and HEVs; the Coalition supported the initiation of this program last year and supports additional funding for continuation of an ARPA program in fiscal year 1994 and beyond. The need for these funds and the amount and use of additional appropriations to ARPA are the principal topics addressed in this statement.

CONGRESSIONAL SUPPORT FOR ELECTRIC VEHICLE DEVELOPMENT

The Congress has provided the leadership and commitment of the U.S. government to the development of this new and important mode of transportation. Several different federally-supported initiatives were enacted just last year including the following:

1. The Energy Policy Act of 1992 (the "Act") authorized several EV and HE in programs with total authorizations of $625.3 million over a ten year period. These authorizations are provided for the conduct of: a $50 million/ten year EV/HEV commercial demonstration program; a $40 million/five year infrastructure development program; a $50 million/five year state government assistance program for states to develop and implement incentives for alternative fuels and alternative fuel vehicles; a data collection and analysis program targeted at large metropolitan areas and directed toward all alternative fuels, including electricity; and, a $485.3 million/five year EV research and development program. In addition, the Act requires the inclusion of alternatively-fueled vehicles, including electrics, into various public fleets over the course of the next several years. Further, "providers" of alternative fuels, including electric utilities, must incorporate alternatively-fueled vehicles into their fleets by a date certain.
2. The fiscal year 1993 Interior and Related Agencies appropriations measure (Public Law 102–381) provided specific appropriations for a variety of research and development-related EV and HEV activities. These included—(*a*) $28.7 million to continue the multi-year research and development program to develop mid-term and longer term advanced batteries; this major R&D effort is being conducted by the United States Advanced Battery Consortium (USABC) which is comprised of the major U.S. automobile manufacturers, the electric utility industry, several equipment manufacturers and the federal government; (*b*) $15 million to initiate a multiyear research and development program to develop hybrid electric vehicle propulsion systems; and, (*c*) $1.2 million to continue the Site Operator Users Task Force (SOUTF), a Department of Energy supported activity in which non-federal participants cost-share in projects that are "test beds" for EV and EV component development.
3. The fiscal year 1993 defense appropriations measure (Public Law 102–396), as described above, provided $25 million in fiscal year 1993 to be administered by ARPA for the development of EV and EV-related infrastructure demonstration programs.

In addition to the ARPA program and programs administered through the Department of Energy to support the USABC and other on-going EV-related research and development activities, the Federal Transportation Administration (FTA) within the Department of Transportation was appropriated $12 million in fiscal year 1992 to support EV development efforts. Grants have been awarded to four consortia: CALSTART ($4 million to develop and exhibit a showcase EV, to demonstrate and evaluate support facilities for EVs, and to develop a prototype electric bus); the Chesapeake Consortium ($4 million, to demonstrate and evaluate EVs with an advanced electric power train and to develop manufacturing plans for production of EVs); the New York State Consortium ($2.3 million to conduct a commercial viability study of EVs and to develop, demonstrate and evaluate a hybrid electric bus); and the Advanced Lead Acid Battery Consortium ($1.2 million to support a fast charging research program to develop battery charging hardware).

THE CLINTON ADMINISTRATION FY 1994 BUDGET REQUEST FOR EV DEVELOPMENT

President Clinton has requested continued funding of the USABC ($40.7 million), the U.S. Hybrid Propulsion Systems Development Program ($18 million), and the Site Operator Users Task Force program ($1.2 million). Also, the Administration's budget request for FY 1994 includes $3.736 million to initiate the EV commercial demonstration and infrastructure development programs authorized under the Energy Policy Act. And finally, as a part of his short-term economic "stimulus package", and also included in the FY 1994 budget request, the President is seeking additional funding for the acquisition of alternatively fueled vehicles to be acquired into the federal fleet.

While electric vehicles are not likely to be acquired for use in the federal fleet at this early date, adequate funding for the fleet acquisition program is important to build consumer confidence with alternatively-fueled vehicles, including electrics; and, it is expected that EVs will be acquired at a future date when the vehicles are more readily available.

ELECTRIC TRANSPORTATION COALITION'S BUDGET RECOMMENDATIONS

Department of Energy programs

In testimony before other subcommittees of the House Appropriations Committee, the Electric Transportation Coalition has urged the Congress to provide continued funding through the Department of Energy for: The U.S. Advanced Battery Consortium; the Electric Hybrid Propulsion Systems Development program; and the Site Operators User Task Force program.

Funding for these research and development efforts are vitally important to the long-term development of consumer-acceptable electric and hybrid electric vehicles. The Coalition fully supports DOE's research and development efforts in support of EVs and HEVs.

The government also is encouraged to support a program that will ensure the early demonstration of a significant number of EVs and HEVs. Only by adopting a program to introduce EVs to consumers in the near term can the nation be assured that the benefits of this technology will be fully realized as soon as possible.

Successful government supported R&D programs for advanced batteries and other componentry ensures that range and performance characteristics of these vehicles will permit the eventual manufacture of a product that achieves the same mileage and performance characteristics of today's gasoline-powered vehicles. The near term challenge, however, is to prepare the marketplace for electric modes of transportation. It is also possible that unless efforts are taken now to place a significant number of EVs on the nation's roadways, we will have lost the opportunity to take advantage of the country's willingness to test alternate forms of transportation and to seek more environmentally acceptable means of transportation.

Importantly, a number of states, including California, New York, New Jersey, Massachusetts, Maryland and Maine, have adopted regulations requiring that by 1998 two percent of the vehicles offered for sale in those markets are to be "zero emission vehicles" (ZEVs). (Note: the Maryland ZEV requirements begin later.) To date, only electric vehicles meet this ZEV requirement. Other states are also considering adoption of this 2-percent requirement. However, there is no requirement to purchase these vehicles. Consequently, the regulatory mandate dictates the production of EVs, but does not require the sale of electric vehicles and does not address the need to prepare consumers to accept this new technology.

The Coalition urges this Subcommittee to fund a demonstration program directed at the large scale testing of these vehicles during the mid-1990's. The Energy Policy Act of 1992 authorizes such a demonstration program. This program, if adequately funded and aggressively pursued, could prepare the marketplace for consumer acceptance of this new mode of transportation by the late 1990's, when various regulatory mandates are triggered.

Proposed additional funding for on-going ARPA program

The current ARPA-funded EV program could be easily expanded to become a large-scale EV commercial demonstration program. Such a program could best ensure early demonstration of available, road-worthy EVs while also encouraging and funding important, advanced research and development necessary to assure that a "consumer-desirable" electric vehicle will be offered for sale to the general public by the late 1990's. The regional consortia that are expected to receive funding under the current ARPA solicitation could form the nucleus for large scale, multi-year demonstration projects of EVs and HEVs. Also, these consortia could be challenged to demonstrate the infrastructure that will be necessary to support EVs and HEVs. This proposed demonstration program builds upon the support for EV development already evidenced by the Congress, as reflected in the Energy Policy Act of 1992. It also recognizes that available, but scarce, federal dollars are most likely to be obtained from budgets originally targeted for defense purposes.

Support of this magnitude for EV development also should invite the consolidation of the various government efforts directed at EVs and HEVs and better assure a focused government effort to address both the research and development programs currently administered by the DOE and a commercialization program to be directed by the ARPA.

Finally, by supporting a new industry in which the United States can claim technological leadership, these funds could assist in the creation of new job opportunities while developing a product that is an environmentally superior mode of transportation.

It is recommended that $90 million be made available in FY 1994 to support as many as ten demonstration projects across the United States to eventually test 5000 or more eligible EVs and/or HEVs and the infrastructure necessary to support these vehicles. This demonstration program should be conducted between fiscal years

1994–97, and should result in a significant number of EVs being placed in demonstration by selected entities by the end of calendar year 1996.

Participating entities will be responsible for the vehicles and infrastructure development that is included in a given demonstration. This type of demonstration program can best ensure that vehicles will not simply be placed into the public domain without the infrastructure support systems necessary to assure the successful, convenient and safe operation of the vehicles. Further, the program should be designed to assure that infrastructure systems (beyond those required to support vehicles in the demonstration program) are designed and/or put in place to support the much larger numbers of EVs that will be required to be produced beginning in 1998.

The requirements for this suggested program could be governed by the EV commercial demonstration and infrastructure development programs already authorized in the Energy Policy Act of 1992 (P.L. 102–486).

Widespread use of electric vehicles will not occur unless this type of market preparation, or "seeding" occurs. R&D programs now underway do not address the need to develop these markets and gain consumer acceptance. With appropriate criteria, as set forth in the Energy Policy Act provisions, road-worthy EVs—utilizing technology currently available—could be used in limited demonstration applications.

Conclusion

Before the environmental, energy security and potential economic development benefits of electric vehicles can be fully realized throughout the United States, there must be production of road-worthy EVs; consumer acceptance of EVs as demonstrated by a willingness to voluntarily purchase the vehicles; and creation of the infrastructure necessary to support EV usage. Continued funding of on-going EV programs and implementation of the authorities of the Energy Policy Act offer a very important opportunity to significantly advance the development of EVs capable of meeting consumer demands and to begin to systematically address the many needs in the development of supporting infrastructure.

The Coalition looks forward to contributing to the dialogue about how best to design effective Federal EV incentive programs in the days ahead.

ELECTRIC TRANSPORTATION COALITION MEMBERSHIP

Allegheny Power Service Corporation
American Electric Power Service Corporation
American Nuclear Energy Council
American Public Power Association
Arizona Public Service Company
Asea Brown Boveri, Inc.
Baltimore Gas & Electric Company
Boston Edison Company
California Department of Commerce
Centerior Energy Corporation
Chattanooga Area Regional Transportation Authority
Chrysler Corporation
City of Albuquerque
City of Chicago Department of Environment
City of Detroit
City of Riverside
City of San Diego
Commonwealth Edison
Consolidated Edison of New York
Consumers Power
Copper Development Association
Detroit Edison
District of Columbia Energy Office
Duke Power Company
Edison Electric Institute
El Paso Electric Company
Electrosource, Inc.
Entergy Corporation
Florida Power and Light Company
Florida Power Corporation
Florida Solar Energy Center
FMC Corporation
Ford Motor Company
General Motors Corporation

General Public Utilities
Georgia Tech Research Institute
Hughes Aircraft Company
Illinois Power Company
International Brotherhood of Electrical Workers
International Lead Zinc Research Organization
Kansas Electric Utilities Research Program
Long Island Lighting Company
Los Angeles Department of Water & Power
National Electrical Manufacturers Association
National Rural Electric Cooperative Association
Nevada Power Company
New York City Department of Telecommunications & Energy
New York Power Authority
New York State Electric and Gas Corporation
Niagara Mohawk Power Corporation
Northeast Utilities
Northern Indiana Public Service Company
Oklahoma Gas & Electric Company
PacifiCorp
Pacific Gas & Electric Company
Pennsylvania Energy Office
Pennsylvania Power & Light Company
Philadelphia Electric Company
Potomac Electric Power Company
PSA Peugeot-Citroen/USTR
PSI Energy
Public Service Electric & Gas Company
Sacramento Municipal Utility District
Salt River Project
San Diego Gas & Electric Company
Solar Electric
Solar Energy Industries Association
South Carolina Electric & Gas Company
Southern California Edison
State of Colorado
State of Hawaii/IITDC
Texas A&M University System
The Doe Run Company
The Southern Company
Theodore Barry & Associates
Town Creek Industries, Inc.
Unique Mobility, Inc.
University of California, Davis
University of South Florida
Virginia Power
West Virginia University

STATEMENT OF THE FEDERATION OF BEHAVIORAL, PSYCHOLOGICAL, AND COGNITIVE SCIENCES

Chairman lnouye, members of the Subcommittee, the Federation of Behavioral, Psychological and Cognitive Sciences is a coalition of 17 scientific societies and some 150 university graduate departments and research centers. The scientists of the Federation carry out research on all aspects of human behavior. Much of their research has direct relevance to military decision making, to development of special purpose computers and robotics, and to armed forces personnel selection, training, placement and performance. Resources to support this work by our scientists is provided by the Army Research Institute Basic Research Office, by the Cognitive and Neural Sciences Division of the Office of Naval Research and by the Life Sciences Division of the Air Force Office of Scientific Research. We wish, therefore, to comment on the behavioral science appropriation requests for these three offices.

We begin by bringing to the Subcommittee's attention a problem that arose in the FY93 budget. It happens from time to time that a senator or representative is aware of a particularly worthy project in his or her home district or state that is not provided for in a relevant part of the Federal budget. The representative or senator may correct that oversight by writing the project into the relevant budget. That happened last year with respect to the defense basic research budget. Unfortunately, while the project was written in, no funds to pay for it were included. As a result, the research offices of the Army, Navy and Air Force were taxed to gather funds to support the project. While the budget deductions at the Navy and Air Force were painful to absorb, they were not devastating. That was not the case at the Army Research Institute. Approximately $900,000 were removed from the ARI Basic Research Office 6.1 budget. That office's total 6.1 budget is normally about $3.5 million. One-fourth of the office's budget, in other words, was taken to pay for this one project. ARI normally devotes approximately $1 million of its annual budget to new research projects and the rest to continuation funding of ongoing research. That $1 million normally funds about 10 new starts each year. The effect of taking the $900,000 was to make it impossible for ARI to fund new research projects in FY93. The loss of a complete cohort of projects is a very serious loss. It was a blow that ARI administrators struggled hard to soften. By delaying payments to ongoing contracts, it was possible to fund a few new starts. But this is literally a case of robbing Peter to pay Paul. The ARI basic behavioral research budget is under a great deal of stress as a result of this precipitous loss in funding, and we ask the Subcommittee to be sensitive to this problem as it considers the fiscal year 1994 budget request. A one-time addition of $1.15 million to the ARI basic behavioral research budget would allow funding of the contracts whose support was put in question and would relieve the pressure on existing contracts that has occurred as the result of delayed payments.

We argued before this Subcommittee last year that as the overall defense budget is cut and as the number of people in uniform decreases, it will be necessary to make the best possible use of those personnel who remain. In such an environment, behavioral research is more necessary than it has ever been because it is this research that enables the best use of remaining personnel. It is this research that develops machine alternatives to humans for some applications freeing personnel for other tasks. And this research also assures that humans will be able to use the complex hardware of the modern armed forces.

Our argument appears to be consistent with the thinking of the Appropriations Committee and Secretary Aspin since, with the exception of ARI, support for these research programs has not declined even though other aspects of the R&D budget have declined. With the exception of the shortfall we have just noted at ARI, and a further anticipated reduction in ARI's FY94 request, we are in the enviable position of urging the Subcommittee to support the President's request for behavioral research funding. The budget numbers for behavioral research supported by ARI, ONR and AFOSR are small enough that they are all but invisible against the backdrop of even a reduced defense budget. For the record, ARI requests $3.2 million for 6.1 behavioral research, and $2.438 million for the Small Business Innovation and Research program. The $3.2 million represents a significant reduction from the FY93 level of $3.45 million. Our request that you consider adding $1.1 million to the ARI budget takes account both of the shortfall in FY93 and the anticipated cut in FY94. ONR requests $17.5 million for its 6.1 work in cognitive and neural science. It also manages two Defense Advanced Research Projects Agency programs whose combined costs are $6.5 million. And AFOSR requests $48.105 million for life and environmental sciences research as well as $11.407 million for a special project on human performance.

Given that at least two of these budgets are rising slightly over FY93 while many other portions of the defense budget are falling, it is fair to ask what this money is buying. In this testimony I want to give you a thumbnail sketch of just some of the uses of this money. I hope the examples will demonstrate that the money is being well spent.

Secretary Aspin has made it clear that dual use technology is to be a goal of military R&D efforts. Many of the behavioral research projects for which support is sought address questions whose answers are of equal value in military and civilian applications. In fact, this research was producing dual use applications long before such applications became a defense department priority. One such current project is the ONR-managed DARPA project which was just mentioned. Long ago, DARPA began to invest in research to develop computers that could understand natural language. It turned out that this was a daunting task, and the work was all but abandoned for a time. But DARPA's initial work formed the research base for further development of this technology outside the military. The combination of military and civilian research has now brought researchers close to solving the problems involved with computer processing of natural language. Anyone who has visited a computer store recently has seen the first rudimentary civilian products from this research. These are computers that can act on simple spoken commands. This technology is being applied in a host of military applications, including computers on military aircraft that respond to voice commands.

ONR has also been a leader in basic research on neural networks. This research is aimed first at understanding how the brain receives, processes, stores and retrieves information and then at using this knowledge to build special purpose computer chips that imitate aspects of human information processing. Again, neural network research has a great variety of civilian and military applications. ONR is working right now to apply this research to classification of sonar signals. On the civilian side, neural network technology is used in airport devices that detect plastic explosives hidden in luggage. An important aspect of neural network circuitry and software is that the technology can learn from experience. Because of this quality, it will eventually be possible to produce a variety of machines for civilian and military use that become better at their task over time.

These two areas of research are somewhat exotic. Much of the behavioral research that is supported through the defense budget is aimed at answering questions that face personnel supervisors in military and civilian organizations everyday. In this regard, ARI, has been funding research on factors that motivate effective human performance in organizations. For example, researchers have found that a single directive given by a supervisor to two personnel from widely divergent backgrounds is both understood and acted on differently by the two individuals. The researchers are experimenting with ways to maximize the effectiveness of supervisors who must direct the work of an organization with heterogeneous personnel. Military units and civilian businesses are both organizations of human beings. What ARI researchers are learning about increasing the productivity of military organizational units can be applied directly to improving the productivity of businesses that employ personnel from widely varying cultural backgrounds. The outcome of such research can lead to better understanding of ways to manage a labor force made up of individuals with diverse social and cultural backgrounds. This is especially important, since the demographics of our country's population make it clear that the labor force is becoming increasingly heterogeneous.

How to downsize properly is a matter of overriding concern in the defense department currently. To try to approach this problem from a base of knowledge, ARI has recently pulled together its findings from research on adjusting the size of organizations. Their document on downsizing is being read widely in the Defense Department. And the approaches the research suggests for accomplishing effective downsizing are being applied to the downsizing of CECOM, the Communications and Electronics Command. ARI's technical training branch is also using the information to show officers how to manage downsizing effectively. This issue of downsizing is not solely a concern of the military. Many American corporations are faced with the same problem. To aid the corporate sector in this task, much of the research ARI has supported over the years in this area has been combined with civilian research in the area and published in a major book called *Organizational Change and Redesign*. The book, and the ARI document, outline several approaches to downsizing that research has shown to be effective.

A major concern of those charged with assuring the effectiveness of the armed forces as they are being downsized is that this process not result in what Secretary Aspin has called "hollow forces." This is a situation in which the organizational structure of the military has been preserved, but the numbers of personnel within each organizational unit have been decimated to the point where the units are no longer prepared to do their job. One aspect of preventing this "hollow force" situation is to eliminate whole divisions rather than maintaining the divisions with an insufficient number of personnel. But another aspect of maintaining readiness is making better use of the personnel who remain. To accomplish this, the skills of individuals must be well understood as must personal traits such as the ability of the individual to perform under high stress. Those skills and personal characteristics must be matched with the tasks and the organizational units for which each individual is best suited. A high level of training must be delivered in a reasonable time period. And careful consideration must be given to replacing humans with machines wherever this is feasible so that remaining personnel can be employed at tasks that only humans can perform. Finally, it must determine how often, and in what manner, combat-related skills must be practiced to assure that they will be available when the time comes to use them in earnest. Those questions are precisely the kinds of questions the behavioral research units of the Army, Navy and Air Force are equipped to handle. Here are some specific ways they are addressing the problems related to downsizing.

In a smaller military, choices about leadership become critical. It is more necessary than ever to put the right officers in the right places at the right times. ARI has produced 25 years of research on leadership to make that possible, and it has recently synthesized the results of those years of research. In so doing, it has revealed both the complexity of selecting and placing effective leaders and the means to manage that complexity successfully. The research shows that not all leaders are good for all purposes. To achieve effective leadership, it is necessary to know the intellectual capacity and personal characteristics of the prospective leader. Just as importantly, it is necessary to know how that leader is to be used. And it is necessary to train the right leader in the right way for the functions he or she is to perform. Leaders who have high aptitude test scores, for example, tend not to be good leaders in high stress situations because they tend to overanalyze their choices. They are, however, more effective leaders in low-stress situations than are leaders with lower aptitude scores. Out of the research have come methods for selecting potential leaders with particular qualities, for training these leaders in special ways to assure that those particular qualities are enhanced, and for placing the leaders in the particular leadership positions at which they will perform best.

As the defense budget is reduced, the cost of readiness training becomes of greater concern. Field maneuvers are very expensive. Work that behavioral researchers have been doing on what the military calls "Distributed Interaction Simulation" and what those in the civilian sector call "Distance Learning" is pointing the way to maintaining readiness at greatly reduced cost. By using computers with sophisticated simulation programs at each of the bases that would normally be deploying troops for a field maneuver, it is possible to have personnel who are continents apart participate in simulated maneuvers without ever having to leave their bases. There will always be a need for real field maneuvers, but a great deal of expertise in the technical aspects of combat can be gained through distributed interaction simulation, thus reducing the cost of readiness training while allowing for the exercise of combat skills more routinely than would be possible through actual field maneuvers.

The technology that enables distributed interaction simulation has potential widespread application for education and training purposes in the civilian sector. Rural areas where students would normally not have access to highly skilled trainers or to teachers with specialized expertise could receive training or education of high quality through use of this technology. In a sense, military reservists are like rural students. The bases to which reservists report are often not equipped to afford the reservists with specialized training. A special Army unit in Boise, Idaho is taking advantage of distributed interaction simulation technology to put together training packages in a variety of skills for reservists. Through these computerized packages, it will be possible to offer specialized training at any reservist site in the country.

As Desert Storm illustrated, it is likely that future combat missions will involve troops of a variety of nationalities and language backgrounds fighting as allies. The ability to communicate in languages other than English becomes very important in such situations. But this country has never been very good at teaching its citizens, military or civilian, to use languages other than English. Scientists, including specialists in behavior analysis, have been funded with defense dollars to find ways to train personnel quickly in the use of another language and to train them in a way that assures retention of the learning over time. By marrying research-based knowledge of how humans process and store information, with computer technology, it has been possible to create software that can answer military needs to communicate well in languages other than English. And it is obvious that this same technology is ripe for use in civilian classrooms.

The behavioral research programs of the Army, Navy and Air Force have long been directed at supplying the research-based knowledge necessary to make the best use of human resources. Of course, it has always been desirable to have an efficient, effective armed force. But, when the ranks of those in uniform was swelling rather than shrinking, what was not accomplished by solid, research-based decision making about personnel could be accomplished by sheer force of numbers. When one person was found to be inadequate in a given position, there were others in line to take that person's place. That luxury is past. What could once be accomplished with redundance must now be accomplished with careful planning. That is why the work of the behavioral research units of the Army, Navy and Air Force is more important to the success of the armed forces today than it has ever been. That is why their work is worthy of your continued strong support.

We thank the Subcommittee for this opportunity to present our views.

STATEMENT OF THE FLEET RESERVE ASSOCIATION

The 1992 national election campaign highlighted the issue of the growing national debt and the increasing need to reduce the national deficit. Following the election and the commencement of the 103rd U.S. Congress, the drive to reduce government spending and the national deficit was in full swing. A major target of many budget-cutters is the Department of Defense (DOD) Budget. Reducing the cost of military personnel compensation and retirement is seen by many Members of Congress as an easy source of dollars and as a "solution" to curing the nation's budget woes. Much of the discussion about defense reductions has been serious and thoughtful, but most of the actions seem to be reckless and inaccurate, when it comes to military personnel matters. These proposed actions are damaging to the morale of the armed services. Critics of the military retirement system contend it costs the government too much, is an inefficient force management tool, and is too liberal in its provisions.

The discussion of the military retirement system has been waged by members of the U.S. Congress and their staffs, administration officials and defense experts. But, few have paid attention to the views of the military careerists, and retirees—those who would be most affected by any changes to the system. The Fleet Reserve Association, an organization of 169,000 active duty, reserve, and retired personnel of the U.S. Navy, Marine Corps, and Coast Guard plus their families and survivors has prepared this testimony for three primary reasons: To present the views of current careerists and military retirees, particularly enlisteds, on military retirement; to contribute a more sober and long-term-oriented understanding of the present military retirement system and the important function it serves.

The Fiscal 1994 Budget Resolution (H. Con. Res.) calls for all military retirees below the age of 62 to receive half of their military Cost-of-Living-Adjustment (COLA) until they reach the age of 62, "Diet-COLAs." Under the guise of saving money and led by the Budget Committees, the U.S. Congress is bent on "cashing-in" on quick savings by changing the military retirement system. Deferring COLAs for young military retirees would moderate the government's cost for military retirement; however, the drastic changes to the military retirement system, as now proposed, would significantly reduce retirement benefits for military personnel, and negatively affect the morale, cohesion and readiness of the U.S. Armed Services.

Congress approved COLAs for military retirees in 1958 (Public Law 85–422 enacted 1 June 1958) and set in place a retirement system that provides for annual adjusted retired benefits to automatically protect the purchasing power of initial retired pay. Since the enactment of this law, Congress has tried many times to reduce this important benefit.

The Omnibus Budget Reconciliation Act of 1982 (Public Law 97–253 enacted 1 October 1982) enacted a temporary COLA cap for fiscal years 1983–1984 and 1985 and a COLA delay. It provided that all federal retirees under age 62 were to receive only one-half of the C.P.I. increase; retirees over the age of 62, disabled retirees and surviving beneficiaries would receive the full COLA. Furthermore, the effective COLA dates were extended from 12 to 13 months, versus a year, as the March 1 effective date was extended to April 1, 1984 and June 1, 1985. The half-COLA for federal retirees was patently inequitable for military retirees because four out of five federal retirees under the age of 62 were military retirees. Thus, the military retired community bore the brunt of the savings achieved by this law.

The DOD Authorization Act of FY 84 (Public Law 98–94) required DOD to round down to the next lowest dollar military retired pay and survivor annuities. It also directed DOD to amend the six-month rounding rule to provide that each month of service would be used to compute retired pay of any member retiring after September 30, 1983. Again, the military retirement system is the focus of deficit reduction.

The Omnibus Budget Reconciliation Act of 1983 (Public Law 98–270) delayed the annual COLA from May 1 to December 1, and changed the basis for the COLA adjustment to match the change in the consumer price index (CPI) from the average for the third quarter (July, August, and September) of one year to the next. This action resulted in the permanent loss of a 2.6 percent adjustment, which would have occurred, if the change in CPI from the last adjustment (April 83) to the beginning date of the new CPI base figure (average for third quarter 1983) was included in the calculation. Military retirees again were forced to give up part of their benefits for deficit reduction.

The Defense Authorization Act of 1986 proposed to eliminate the military retired pay COLA scheduled for January 1, 1987. The final Concurrent Resolution on the Budget rejected the recommendation to cancel the FY 1986 COLA, indicating initially that it would be paid as permanent law provided on January 1, 1986. However, the Balanced Budget and Emergency Deficit Control Act of 1985, also known as the Gramm-Rudman-Hollings (GRH) Act (Public Law 99–177; December 12, 1985) suspended the military COLA until other provisions of the GRH Act took place. Specifically, subsection 252(a)6(c) of GRH provided that "the amounts that would otherwise be expended" during this period would be withheld. The President, according to other provisions of GRH, determined that the payment of the FY 1986 COLA had to be eliminated to assist in reducing the FY 1986 Federal deficit. It was therefore permanently canceled.

All DOD budget requests from 1983 (FY 1984) through 1986 (FY 1987) contained COLA related proposals, which usually had the aim of postponing or eliminating military COLAs to save money.

President Bush's Budget Proposal for fiscal year 1991 would have completely eliminated the COLA and decreased all COLAs after 1991 to one percent below the rate of inflation. The President's FY 1993 budget again attacked the annual military COLA by proposing a provision under "technical improvements in the Budget Enforcement Act" to eliminate or limit most exemptions from sequestration (while preserving the exemption for Social Security)." The numerous actions to reduce the military retiree's COLA has had a long turbulent history and sends the wrong message to those who serve and have served so magnificently to protect our nation's freedoms.

OVERVIEW OF THE MILITARY RETIREMENT SYSTEM AS OF SEPTEMBER 30, 1992

The military retirement system is for members of the Army, Navy, Marine Corps, and Air Force. Most of the provisions also apply to retirement systems for members of the Coast Guard (administered by the Department of Transportation). Only people in plans administered by the Department of Defense are included in this valuation.

The system is a funded, noncontributory defined-benefit plan that includes non-disability retired pay, disability retired pay, retired pay for reserve service, and survivor annuity programs. The Service secretaries approve immediate non-disability retired pay at any age with credit of at least 20 years of active-duty service. Reserve retirees must be 60 years old with 20 creditable years of service before retired pay commences. There is no vesting before retirement.

There are three distinct non-disability benefit formulas (relevant to three distinct populations) within the military retirement system. Military personnel who first became members of the Armed Services before September 8, 1980 have retired pay equal to (terminal basic pay) times (a multiplier). The multiplier is equal to (2.5) times (years of service) and is limited to 75%. If the retiree first became a member of the Armed Services on or after September 8, 1980, the average of the highest 36 months of basic pay is used instead of terminal basic pay. Members first entering the Armed Services on or after August 1, 1986 are subject to a penalty if they retire with less than 30 years of service; at age 62, their retired pay is recomputed without the penalty.

In FY92, 1.20 million non-disability retirees from active duty were paid $20.17 billion.

Retiree and survivor benefits are automatically adjusted annually to protect the purchasing power of initial retired pay. The benefits associated with members first entering the Armed Services before August 1, 1986 are adjusted by the percentage increase in the average Consumer Price Index (CPI). This is commonly referred to as full CPI protection. Benefits associated with members entering on or after August 1, 1986 are annually increased by the percentage change in the CPI minus 1%. When the military member reaches age 62, benefits are restored to the amount that would have been payable had full CPI protection been in effect. This restoral is in combination with that described in the previous paragraph. However, after this restoral, partial indexing (CPI minus 1% continues annually for life). Congress and the Pentagon have debated the military retirement program for over two decades. It's about time to bring matters to a head and quit breaking pension promises.

Disability retirement

A military member is entitled to service-connected disability retired pay if the disability is at least 30% (under a standard schedule of rating disabilities by the Veterans Administration) and either (1) the member has eight years of service; (2) the disability results from active duty; or (3) the disability occurred in the line of duty during a time of war or national emergency or certain other time periods.

In disability retirement, the member receives retired pay equal to the larger of (1) the accrued non-disability retirement benefit, or (2) base pay multiplied by the rated percent of disability. The benefit cannot be more than 75% of base pay. only the excess of (1) over (2) is subject to Federal income taxes. Base pay is equal to terminal basic pay if the retiree first became a member of the Armed Services before September 8, 1980. If the retiree first entered the Services on or after September 8, 1980, base pay is equal to the average of the highest 36 months of basic pay.

Members whose disabilities may not be permanent are placed on a temporary-disability retired list and receive disability retirement pay just as if they were permanently disabled. However, they must be physically examined every 18 months for any change in disability. A final determination must be made within five years. The temporary-disability pay is calculated like the permanent-disability retired pay, except that it can be no less than 50 percent of base pay.

In FY92, 130,000 disability retirees were paid $1.52 billion.

Reserve retirement

Members of the reserves may retire after 20 years of creditable service, the last eight of which must be in a reserve component. However, reserve retired pay is not payable until age 60. The formula for computing retired pay is (base pay) multiplied by (2.5%) multiplied by (years of service). If the reservist was first a member of the Armed Services before September 8, 1980, base pay is defined as the active duty basic pay in effect for the retiree's grade and years of service at the time that retired pay begins. If the reservist first became a member of the Armed Services on or after September 8, 1980, base pay is the average basic pay for the member's grade in the last three years that he/she was a member of the Armed Services. The years-of-service are determined by using a point system in which 360 points convert to a year of service. Typically, a point is awarded for a day of service or a drill attendance, with 15 points being awarded for a year's membership in a reserve component. A creditable year of service is one in which the member earned at least 50 points. A member cannot retire without 20 creditable years, although points earned in non-creditable years are used in the retirement calculation.

In FY92, 193,000 reserve retirees were paid $1.76 billion.

Survivor benefits

Legislation originating in 1953 provided for optional survivor benefits. It was later referred to as the Retired Servicemen's Family Protection Plan (RSFPP). The plan proved to be expensive and inadequate because the survivor's annuities were never adjusted for inflation and could not be more than 50% of retired pay. RSFPP was designed to be self-supporting in the sense that the present value of the reductions to retired pay equaled the present value of the survivor annuities. However, no fund was involved.

In September 21, 1972, RSFPP was replaced by the Survivor Benefit Plan (SBP) for new retirees. RSFPP still covers those servicemen (retired before 1972) who did not convert to the new plan and still pays survivor annuities. Retired pay is reduced, before taxes, for the member's cost of SBP. Total SBP costs are shared by the Government and the retiree, so the reductions in retired pay are only a portion of the total cost of the SBP program.

The SBP survivor annuity is initially 55% of the member's base amount. The base amount is elected by the member, but cannot be less than $300 or more than the member's full retired pay. If a penalty for service under 30 years is included in the calculation of retired pay, the maximum base amount is equal to the full retired pay without the penalty.

The spouse's annuity is considered a two-tiered benefit because, at age 62, the annuity is reduced to 35% of the base amount. Prior to the enactment of the two-tiered benefit, the survivor annuity was integrated with Social Security. SBP participants and active and reserve personnel with at least 20 years of service on October 1, 1985 were grandfathered under the two-tiered system. Their survivors will receive the higher of the two annuities.

During FY87, a change was made to the SBP that increased benefits for survivors. Prior to that date, a widow remarrying before age 60 lost her survivor annuity. The age after which there is no loss of benefits to a surviving spouse who remarries has been reduced from age 60 to 55,

Members, who die on active duty with over 20 years of service, are assumed to have retired on the day they died and to have elected full SBP coverage for spouses and/or children.

SBP annuities are reduced by veteran's survivor benefits and all premiums relating to the reductions are returned to the widow. Additionally, SBP annuities are annually increased with cost-of-living adjustments (COLAs). These COLAs may be based on full or partial Consumer-Price-Index increases, depending on when the member first entered the Armed Services. If the member dies before age 62 and the survivor is subject to partial COLAs, the survivor's annuity is increased (on the member's 62nd birthday) to the amount that would have been payable had full COLAs been in effect. Partial COLAs continue annually thereafter.

For reserve retirees, the same retired pay reductions apply to survivor coverage after the reservist reaches age 60 (when the reservist begins to receive retired pay).

A second option (funded by the member only) extends this coverage to reservists who have enough service to retire, but have not attained age 60. The added cost of the pre-age 60 coverage is deducted from the member's retired pay and the survivor's annuity.

In FY92, 181,000 surviving families were paid $1.13 billion.

Relationship with Department of Veterans Affairs benefits

The Department of Veterans Affairs (DVA) provides compensation for Service-connected and certain non-service-connected disabilities. These DVA benefits can be in place of (or in combination with) DOD retired pay, but they are not additive. Because DVA benefits are exempt from Federal income taxes, it is sometimes to the advantage of a member to elect them.

DVA benefits also overlap survivor benefits through the Dependence and Indemnity Compensation (DIC) program. DIC is payable to survivors of veterans who died from service-connected causes. A reduction of this amount is made to the SBP annuity; however, all premiums relating to the reductions are returned to the widow.

Relationship of retired pay to military compensation

Basic pay is the only element of military compensation upon which retired pay is computed and entitlement is determined. Basic pay is the principal element of military compensation which all members receive; but it is not representative, for comparative purposes, of salary levels in the public or private sectors. Reasonable comparisons can be made, however, to basic military compensation (BMC) or regular military compensation (RMC). BMC is the sum of basic pay, the quarters allowance (either cash or in kind), a subsistence allowance (either cash or in kind), and the Federal tax advantages accruing to allowances, because they are not subject to Federal income tax. RMC is BMC plus the average variable housing allowance (which varies by location) and the additional tax advantage it brings. Basic pay represents approximately 77% of BMC or 73% of RMC for all retirement eligibles. For the 20-year retiree, basic pay is approximately 75% of BMC or 71% of RMC. Consequently, a 20-year retiree may be entitled to 50% of basic pay, but only 37% of BMC or 35% of RMC. For a 30-year retiree, the corresponding entitlements are 75% of basic pay but only 60% of BMC or 57% of RMC. These relationships should be considered, when military retired pay is compared to compensation under other retirement systems.

SECOND CAREER EARNINGS LOSS

Currently, there are 1.5 million retirees. Of these, 75% are enlisted personnel and 4% are warrant officers. Less than five percent are senior officers with the rank of colonel or captain (Navy). Admirals and other flag officers constitute only 0.3 percent of all retirees. The average military retiree is 43 years old, married with two children, and is an enlisted member in pay grade E–7 with twenty-three years of service. The member has made eight Permanent Changes of Station moves, with one to three remote tours of duty, and Navy personnel may often spend as much as 14 of their 20 years at sea.

If the member retired in 1992, the monthly retired pay of $1053.00 would total $12,636.00 per year. A moderate income for a family of 4 is $20,342.00. In real terms, the member's retired pay has remained level since 1979. The military retiree is forced to make a career change at mid-life when family expenses are the highest and civilian peers are at their optimal earning ages.

The Services have conducted studies of military retirees' post-service earnings. A report by the Air Force Conference Board compared wages for military retirees and civilian veterans. The report shows both officer and enlisted military retirees earn less in their post-service careers than a comparably aged and educated non-retiree veteran civilian counterpart.

For example, at age 44, immediately upon entering the civilian labor market, officer retirees (working full-time year-round) have about a 27% lower earnings than the 50th percentile of similarly non-retired, full-time, year-round veterans. Although this gap narrows by age 60, it never closes completely. It represents a lifetime career earnings loss of 13.7% because a military career was chosen. For full-time year-round enlisted retirees, the earnings gap exceeds 20% at age 41. Similar to the officers, this gap narrows with age but never closes completely. It represents a lifetime loss of 19.7 percent.

In recent polls taken by the Fleet Reserve Association, we find that 70% of military retirees who sought civilian employment report they took a salary reduction. In addition, over 50% of all retirees surveyed reported that they are not earning what their civilian counterpart in the same job is earning. Obviously, the practice of employers paying a military retiree less because he is receiving earned military retirement is still prevalent. This practice reinforces the value of the present retirement system to the individual.

MISCONCEPTIONS

There are numerous misconceptions among the public that military personnel retire after twenty years of active service and receive "half-pay" as their military "pension." That perception is wrong on three counts.

In the first place, the majority of military retirees serve longer than twenty years on active duty. The typical military retiree is a retired Chief Petty Officer or Sergeant First Class with twenty-three years of service.

Secondly, military personnel do not "retire" after twenty years of service. After "retirement" they are subject to involuntary recall to active service until they complete thirty years of service when they are placed on the military retired rolls, and remain subject to the Uniformed Code of Military Justice. Even after full retirement, in time of national emergency or war they may be recalled to active service.

Thirdly, military retired pay is not a pension. The U.S. Supreme Court has so ruled in two landmark opinions. In the case of the United States vs. Tyler, 105 U.S. 244 (1822), the Court ruled that, "Military retired pay is reduced pay for reduced services." Again in McCarty vs. McCarty, 453 U.S. 210 (1981), the U.S. Supreme Court described military pay as "reduced compensation for reduced services." Military retired pay, clearly, is not an old age pension.

Career enlisted personnel of the U.S. Navy, Marine Corps, and Coast Guard do not retire after twenty years of active service. They may, upon completing twenty years of active service, request the Secretary of the Navy to transfer them to the Fleet Reserve or Fleet Marine Corps Reserve, respectively.

AN HONEST LOOK AT A MILITARY CAREER

Today there are approximately 29 million American veterans of military service in the United States. Each of them was exposed to military life, and except for the disabled veterans they had an opportunity to choose a military career: The vast majority of them did not select a military career. Only thirteen percent of those who served in the military chose to pursue a military career and earn a retirement benefit. If military retirement is so lucrative, why do so few people choose the military as a career?

A common incorrect assumption among critics of military compensation is to equate military service with civilian employment. The two are distinctly different.

Military service is distinctly different from civilian employment by the very nature of such service. A military member agrees to surrender of certain personal freedoms for twenty or more years. There is no such sacrifice in civilian employment.

When a person enlists in the U.S. Armed Forces, the service "owns him/her body and soul" for 24 hours a day for the duration of the enlistment. The military member can be ordered to go anywhere, anytime and do anything. He/she has taken an oath to serve. If the member does not like the orders he/she receives, (i.e. the location of the next duty station) he/she cannot change jobs, not even to another service. No civilian job restricts the personal freedom of an individual in this way.

The demands of a military career set the military apart from society as distinctly as the requirement to wear a uniform. A military career demands long hours of work with no overtime pay, forced family separations, frequent exposure to risk, inability to control one's working environment and living conditions, the acceptance of a highly disciplined life and the abridgement of individual freedoms.

It takes unique people to give of themselves in such a measure. In times of war, the American civilian sector has proven it can match that sacrifice for long periods. But the American public has clearly demonstrated its reluctance to accept the measure of sacrifice as a continuing way of life. There is an enormous difference between civilian employment and a military career.

THE UNCERTAINTY OF A MILITARY CAREER

Increased numbers of soldiers, sailors and airmen are genuinely concerned about the perception that the Administration and the U.S. Congress have forgotten the importance of the people in the nation's Armed Forces. Year after year the Administration and the U.S. Congress attack the benefits of members of the services. It seems to many military members that nothing is sacred about their compensation, benefits and entitlements when budget cutters want immediate savings in federal outlays. Military members are paying attention to the federal budget process more now than ever before because they have been attacked so often that they watch closely to see what's next.

The COLA reduction for those military retirees under the age of 62 is another "one of their benefits" that is going to be changed in mid-stream. Does it affect retention, morale and readiness? You bet it does!

To address the adverse effect the erosion of benefits and the uncertainty of what the future holds for the military member two critical time frames should be understood. They are as follows: 1. The military member whose expiration of enlistment falls within the 8–12 year service frame, and 2. The service member who is fleet reserve eligible (20 years plus time in service).

A critical decision must be made by the service member who comes up for reenlistment when he/she has completed 8–12 years of active duty. A member must decide whether he/she should dedicate more years of service to their country (when it may be more beneficial to leave the military and sell marketable skills in the civilian job market.) It is very difficult to convince military personnel that they will be better off staying in the service if they don't totally accept and believe in service to God, country, and fellow man.

First, service members have an awful lot to offer industry in terms of leadership skills, experience, reliability and technical expertise. Thus, he/she can often command an above average salary; usually more than military pay and allowances. Secondly, he/she regularly hears about congressional "watchdogs" who are constantly probing military pay and benefits and calling for reductions and curtailments in many areas. These statements get wide-spread publication. He/she is probably no longer eligible for any enlistment bonus, and the only monetary benefit he can get when reenlisting is the selling of accrued leave (at a reduced rate) providing he/she hasn't sold the maximum of 60 days. He/she feels very uncertain about what is going to happen to the military retirement system. He/she hears that they have a "no guarantee" enlistment contract and that he/she may not be able to retire under the same system that his predecessors have. Medical care for dependents and for retirees looks more and more questionable. He/she feels certain that the commissaries are going and that the states will soon tax items bought in the Exchanges. Prices for use of special services facilities have increased tremendously, in some cases tripled.

The Congress seems to many to have abandoned service members and these budget actions are viewed as a breach of faith on the part of the U.S. Government. Pay increases always fall short of the true comparability and are less than the rate of inflation. This year there is no pay raise, and until 1998 the increase is one percent less than the employment-cost-index (ECI). Plus, they will have to forego an additional 1/2 percent from their pay to fund the federal civilian workers locality pay. The continuing erosion of benefits—the uncertainty of such things as retirement, medical, leave, commissaries, etc., makes the proverbial "security aspect of a career" rather nebulous for this group of people.

The other critical group of military personnel, those who have 20 plus years of service, are leaving or will very soon leave because the retirement system may change before they can draw the retainer/retirement money that they have rightfully earned. These are not immature youngsters, but veterans of many years of service who just no longer have the confidence or trust in their representatives in Congress to protect their earned benefits. To hear some vocal, headline-making members of Congress speak you would think that the military is a parasite on the economy instead of the front-line of defense to protect our way of life.

Their pay raises fall further and further behind comparability and the rate of inflation each year. It is a sad state of affairs that many lower rated personnel utilize food stamps and the Congress wants to reduce their pay even further and attack their retirement system. The military is an honorable profession, with dedicated people that have families. Those families want to be fed, they must be fed, they must be clothed and they would like to be educated. Just because, there is currently no "nasty war" going on doesn't mean military personnel are second class citizens!

SUMMARY AND CONCLUSION

Many members of the U.S. Congress have offered proposals to change the military retirement system. In most cases, these members of Congress do not understand that the purpose of the retirement system and how it serves to manage the force and to maintain defense readiness. They fail to recognize that military retirement is just one part of military compensation package, and if they reduce retirement value, they must increase another part of military compensation in order to attract and retain the quality personnel needed for an emerging, highly technical military. Mr. Chairman, you can't drop laser-guided bombs down the smoke stacks of our "enemies" with category-four military personnel. That's what you're going to get if you keep on attacking the military retirement system under the guise of reducing the national deficit. Why should roughly 85% of the costs of the President's proposed federal spending reductions be placed on the backs of our nation's military personnel?

Changes in recent years that affect the compensation of current military retirees have been the loss and the capping of the cost-of-living adjustments (COLAs). These cutbacks have been and will continue to be especially hard on current retirees struggling to keep pace with inflation. Keep in mind that the average enlisted person who decides to leave the military with retainer/retired pay does so at mid-life, surrounded by family obligations and a 65% cut in pay. The adoption of the "Diet COLA" for military retirees under the age of 62 will be devastating to the military retiree who has to start over in the middle of his working life.

The House and Senate Armed Services Committees must not let this shortsighted budget action stand. The Fleet Reserve Association urges the Armed Services Committees to reverse this budget proposal and restore to the military retiree his full COLA. This action will replace the active-duty member's fear that the retirement system will be further eroded and that the U.S. Congress is going to stand by its promises and obligations to maintain the readiness of the U.S. Armed Forces.

In closing, most military members seem to feel that "there does not have to be true pay comparability between military and civilian pay." Most do not want to have an illusionary comparability used as justification to reduce the pay, benefits and entitlements they are now receiving and were promised when they enlisted. Most importantly, service members want to be able to depend on the things they were guaranteed when they enlisted. What active duty military personnel and retirees really want is to be compensated equitably and to regain stability and dependability rather than being continually targeted for deficit reductions.

Statement of Genetic Design, Inc.

Mr. Chairman and distinguished Members of the Subcommittee, I am Claude Buller, President of Genetic Design, a genetic testing corporation based in Greensboro, North Carolina. I appreciate the opportunity to testify today.

Genetic Design maintains a state-of-the-art testing laboratory where our scientists identify genetic markers to provide objective scientific evidence for a number of purposes: paternity testing, forensic identification to assist in criminal investigations and bone marrow typing of potential bone marrow donors for critically ill patients. Genetic Design performs over 70,000 bone marrow tests annually—more than any other U.S. company. Our laboratory is accredited by the American Association of Blood Banks and the American Society for Histocompatibility and Immunogenetics. We are also industry leaders in what is referred to as buccal swab technology, a non-invasive procedure currently used by the Army to collect DNA specimens from soldiers that are then used as "DNA dog tags" for identification purposes. I am here today to talk with you about these areas, the role the Defense Department has played and the role it can play. Defense Appropriations is partially responsible for the establishment of the National Bone Marrow Donor Program (NMDP). The nation thanks you for that support.

Bone marrow transplants have gained prominence in the last few years as an effective treatment for certain types of cancer and for some genetic diseases. There are two types of bone marrow transplants. The first is the autologous transplant, in which a patient's own bone marrow is extracted, treated and then replaced. Former Senator and 1992 presidential candidate Paul Tsongas received such a transplant during his treatment for cancer, an event that was widely reported by the media during the most recent Presidential campaign. The second type of transplant, known as an allogeneic bone marrow transplant, involves using bone marrow from a non-identical sibling, family member or an unrelated individual.

There are countless examples of the success medical researchers have had in using bone marrow transplants as an effective treatment for various types of cancer. However, much more needs to be done in the search for a cure for this pervasive disease. The progress made to date certainly warrants further research into the efficacy of this treatment on almost all types of cancer. This is particularly true for breast cancer. For all researchers have learned about early detection, surgical protocols and chemotherapy regimens, more than 182,000 women are diagnosed with breast cancer annually. This disease will needlessly kill approximately 46,000 women in the United States this year alone.

In Fiscal Year 1993, Congress directed that $210 million be appropriated through the Department of Defense for breast cancer research. We applaud the attention the Appropriations Committee has given this issue and believe that these funds will make a tremendous difference in efforts to find effective treatments for this disease.

The knowledge we have gained through our work in bone marrow typing and donor matching, as well as some of the research conducted by medical researchers in the area of autologous transplants, leads us to believe that allogeneic bone marrow transplants may also show promise in the treatment of breast cancer. At the same time, however, we are concerned that proper attention is not being paid to this treatment by the Department. As such, we are requesting that the Committee direct the Department of Defense and the other government agencies involved in this research program to undertake research in the area of bone marrow transplants as part of its program.

While the potential for allogeneic bone marrow transplants is enormous, the ultimate success of this procedure rests in the ability to match patients with donors. Like blood transfusions, these donor matches must be perfect. But unlike blood transfusions, perfect matches are extremely rare. In some cases, matches can be found within the patient's family. A patient's mother, father, sibling or other close relative may possess bone marrow that is compatible for the transplant. When such matches do not exist, as is the case in 65 percent of patients, a patient is forced to find a bone marrow donor through the existing registries of potential bone marrow donors or through donor drives. Such drives involve recruiting literally hundreds of members of the patient's community who are willing to undergo a simple test to see if they are compatible matches. When such tests uncover a potential donor, that donor's blood sample undergoes more extensive tests to ensure compatibility.

The critical factors in finding a compatible donor are race and/or ethnicity. For example, an African-American patient has a better chance of finding a compatible bone marrow donor in the African-American community than in any other community. This rule applies to all populations whether they be of Hispanic, Native American, Irish, English or German origin. Of course, all of these factors combine to necessitate the availability of large pools of potential donors to find that perfect match. Creating such a potential donor base has proven to be a great challenge; and one that has been documented again and again by the media, which often assists patients and their families in their search for a donor.

Again, I am aware that the National Marrow Donor Program has received Federal funding through Defense appropriations for the recruitment and typing of minorities for bone marrow donor roles. Most of this money was directed to the National Registry, one of several bone marrow donor registries operating in the U.S.

Due to the Federal support, the number of minorities on the National Registry's donor data base has increased dramatically; however, minority populations remain under-represented on the National Registry. This under-representation makes it more difficult for a black, Hispanic or Asian patient to find a suitable bone marrow donor. The proportion of minority potential donors on the National Registry does not match the proportion of minorities in the U.S. population, according to the 1990 Census figures. A November report by the Government Accounting Office further supports this case.

The odds of a patient finding a bone marrow donor are 1:20,000; this is a median statistic and certain groups of patients have a much better chance of finding a donor depending upon their genetic ancestry. The under-representation of minorities in the marrow donor pool is directly related to the difficulties encountered by the minority patient in finding a compatible marrow donor. An increase in the number of donors of a particular ethnic heritage increases the chance of successful searches for patients of that ethnicity, as well as increasing the percentage of successful searches for patients in general. The fact that less than 2 percent of African American patients and less than 12 percent of other minority populations identify donors further emphasizes the need for increased minority recruitment. Bearing in mind that there is no "alternative treatment" to bone marrow transplants, many of these minority patients die if they are unable to identify a compatible donor.

Genetic Design has worked closely with the American Bone Marrow Donor Registry, better known as the American Registry, since its establishment in 1984. The American Registry is a community-based, patient advocacy organization with over 43,000 donors in its files, of which over 39 percent are minorities. This success with recruiting minorities has been achieved without any direct Federal assistance. If the American Registry were to receive Federal support for its minority recruitment efforts, drives could be conducted to fill the void on the donor roles significantly.

The American Registry has always focused upon the education and recruitment of viable, committed donors and maintained its emphasis on service to patients. Comprehensive advocacy and strict confidentiality have been and are provided to both donors and patients. Donors are recruited by member donor centers which are each responsible for a geographic region of the country.

The American Registry regularly purges its donor roles to ensure they accurately reflect the availability of potential bone marrow donors to patients. Their minority population consists of 17.8% African American, 10.5% are Asian, 6% are Hispanic, 7% are Greek and 2.3% represent other minorities. The American Registry is proud that they have successfully accomplished this ethnic diversity in their bone marrow registry without any Federal assistance. Presently, most support for their donor recruitment efforts are from private sources. Since its inception in 1984, the American Registry has successfully facilitated over 570 transplants and contributed over $2.5 million to the bone marrow donor effort in this country.

It is important to know that the populations recruited and typed by the American Registry will be accessible to anyone in search of a bone marrow donor. The American Registry will continue to provide full access to its donors to all patients who are unable to access donors within the National Registry. In many cases access fees are waived and assistance is provided for other program and laboratory fees. A donor recruited by the American Registry is available to a greater number of patients than is possible through the NMDP.

The American Registry appeals to donors on an individual and defined group basis. It places strong emphasis on educating each donor about the testing and marrow collection procedures. A recruitment effort may be initiated several months in advance of an actual drive. Awareness and education is accomplished on a gradual basis. This gives the American Registry representative the opportunity to become recognized and trusted in the community. As a result, no American Registry donor has ever failed to proceed to marrow harvest once determination of a second level match is made. Conversely, the National Registry has a 26 percent turndown rate from minority populations at the second level of testing.

Providing Federal support for the American Registry's recruitment efforts will ensure that the minority populations are accurately represented on the registry in a shorter period of time. An unfair burden is placed on the minorities to recruit a higher percentage of their populations. Financial assistance is required to achieve equitable representation in the marrow donor poll so critical to the minority patient. Therefore, I am asking the members of this Subcommittee to set aside $3 million in funding in the Fiscal Year 1994 Appropriations bill for the typing of ethnic and racial minorities in the United States by the American Registry. This amount would effectively add 66,000 minority donors to the rolls and significantly increase the chances of minority patients finding a compatible marrow donor.

Genetic Design looks forward to working cooperatively with the Department of Defense on breast cancer research and on the National Bone Marrow Program. Finally, we believe that we can be an asset to the Department in its use of buccal swab technology. In this era of tight defense budgets, we believe that we can assist the Department in its operations of the current program or its expansion through the use of this technology through our services in the area of the storage and maintenance of DNA samples and/or for other more innovative ideas that may be developed.

Thank you.

STATEMENT OF GEORGETOWN UNIVERSITY

Mr. Chairman and members of the committee, we are Fr. T. Byron Collins, S.J. and Fr. Harold C. Bradley, S.J., Special Assistants to the President of Georgetown University. Thank you for the opportunity to testify on the following two topics: (1) the AKAMAI project and (2) the Armed Forces Health Professions Scholarship Program.

AKAMAI PROJECT

We are grateful for the support that you have given us for the AKAMAI project as a part of the Medical Diagnostic Imaging Support (MDIS) initiative. This initiative establishes a digital filmless radiology capability at the Tripler Army Medical Center and associated Pacific Rim medical treatment facilities, and it supports the continuation of clinical MDIS research in the nation's capital. The appropriated funds of $7.1 million in FY'93 will support Phase I installation of the teleradiology part of MDIS technology at Tripler Army Medical Center, continuation of the Diagnostic Imaging Network System (DIMS) research program in the nation's capital, and linkage of Tripler with NASA's Advanced Communications Technology Satellite (ACTS).

For Phase II of the AKAMAI project we request your support for $16 million in FY'94. These monies would be used to expand the radiology network at Tripler and to install teleradiology and telemedicine capabilities at a number of small Department of Defense medical treatment facilities in the Pacific Rim region. In addition, Phase II will continue MDIS research programs at the nation's capital in order to expand future MDIS capabilities. The Phase II fund will also support the medical image linkage from Tripler Army Medical Center to the Maui Supercomputer facility.

The attached documents detail the current status of the AKAMAI fund, expenditures to date, and projected budgets.

STATUS OF AKAMAI FUND—JUNE 10, 1993

Of $7.1 million appropriated, the Department of Defense in early June released approximately $6.6 million to MDIS project management office of the US Army Medical R&D Command. Phase I of AKAMAI project has three parts: Equipment purchase for Tripler Army Medical Center, ACTS program for University of Hawaii and digital imaging program at Georgetown University.

The following describes the state of the project:

Tripler

The Army is making final adjustments in installation planning for Tripler. A new project member has been identified for Tripler. As soon as the installation plan is complete, Phase I installation will begin, possibly by September 1993.

Hawaii's ACTS project

The MDIS Project Office is making an arrangement to move $400,000 to the state of Hawaii. The State (Mr. Cressafulli with Adm. Hayward) suggested that it might be better to move the money to ARPA toward the purchase of an ACTS HDR dish. The MDIS office is waiting for a recommendation from the representatives of Hawaii as to how the money should be spent to support the ACTS project. The Hawaiian representative met yesterday with AKAMAI project members in Honolulu and they are working out the details.

Georgetown University research project

The MDIS Project Office is preparing to release approximately $3.1 million to Georgetown University. The mechanics for fund transfer to Georgetown are being worked on at this point. They would like to add the money to an existing breast cancer grant that GU has with the Army. This transfer is still being examined.

AKAMAI event

Tripler Army Medical Center is planning to invite Senator Inouye to a symposium on the AKAMAI project toward the end of August, when the Senator might be in Hawaii. A letter of invitation from Tripler will be sent to the Senator's office shortly.

TABLE I

Fiscal year 1993 AKAMAI project budget for phase I—August 5, 1992

Hawaii-based operations:	
Teleradiology spoke DOD medical facilities (2)	$600,000
DOD teleradiology hub at Tripler Medical Center	1,500,000
Intra-MTF teleradiology for intensive care units	600,000
Communication links	300,000
Installation and maintenance	200,000
Subtotal	3,200,000
Washington-based support operations:	
Intra-MTF teleradiology for intensive care units	600,000
Imaging research support for radiation cancer therapy	500,000
Clinical research for chest and bone imaging	500,000
Communication system for ACTS satellite	400,000
Installation and maintenance	200,000
Clinical and technical personnel for D.C. and Hawaii	800,000
Program management and operations	400,000
Subtotal	3,900,000
Total for fiscal year 1993	7,100,000

TABLE II

Fiscal year 1994 AKAMAI project budget

Part I: Technology implementation:	
Installation of MDIS filmless radiology network to outpatient areas and expand Pacific Rim teleradiology capability	$3,500,000
Installation of two-way high-speed teleradiology spoke capabilities at Pacific Rim MFT sites. Possible locations are in Korea, Japan, and Alaska: 3 sites at $500,000 per site	1,400,000
Installation of two-way high speed teleradiology spoke capabilities at sites on and near Hawaiian Islands. Possible sites are: Hickman AFB, Johnson Atoll, Kanehoe Clinic, and Schofield Barracks: 4 sites at $350,000 per site	1,400,000
Communication cost	100,000
Program management cost	500,000
Communication link to Maui supercomputer	500,000
Subtotal for part I	8,000,000
Part II: Research to expand MDIS capability:	
Expansion of digital imaging infrastructure and workstation distribution	2,500,000
Digital mammography cluster for the network	1,500,000
Expansion of hospital's patient care information system	800,000
Pathology research cluster for telepathology	500,000
Interface to Ultrasound, MRI and nuclear radiology service	200,000
Research personnel	2,500,000
Subtotal for part II	8,000,000
Fiscal year 1994 AKAMAI phase II budget total	16,000,000

ARMED FORCES HEALTH PROFESSIONS SCHOLARSHIP PROGRAM

The Armed Forces Health Professions Scholarship Program is used extensively by students at the Georgetown School of Medicine. The financial support provided through this program by the Army, Navy and Air Force is substantial and includes full tuition, an allowance for books, supplies, and health insurance, as well as a taxable stipend and active duty pay. Students participating in this program are referred to as military scholars. This year, there are over 100 military scholars at the Georgetown School of Medicine. This represents almost one of every five students enrolled.

In addition to the benefit received by the Defense Department with the service commitment of these students following graduation, military scholars also benefit through substantially reduced loan indebtedness during medical school. Although a substantial number of our military scholars still borrow through the guaranteed loans programs (Stafford and SLS) during medical school to help supplement their stipend assistance, their borrowing is significantly less than other students. For example, military scholars from the Class of 1991 who borrowed averaged $20,189 in educational debt as compared with $80,882 for non-military borrowers.

By providing a very viable financing option for students considering a Georgetown medical education, the Armed Forces Health Professions Scholarship Program helps our institution maintain its financial blind policy on admissions. Military scholarships help ensure that our institution remains accessible to all students.

We thank the committee for their interest and support for these programs in medical research and financial aid.

STATEMENT OF THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS—UNITED STATES ACTIVITIES

The Defense R&D Policy Committee of the Institute of Electrical and Electronics Engineers—United States Activities (IEEE—USA) is pleased to submit this statement for the record of the Subcommittee's hearings on the 1994 budget request for defense research and development and defense conversion activities. This statement represents the considered judgment of a group of IEEE U.S. members with expertise in the field. IEEE—USA promotes the career and technology policy interests of the 250,000 electrical, electronics, and computer engineers who are U.S. members of the IEEE.

One of the greatest challenges confronting this nation today is the pressing need to adapt our national industrial base and military force structure to meet evolving military requirements in a changing threat environment in ways that promote both our national and economic security.

IEEE—USA believes that meeting this post Cold-War challenge will require successful implementation of a comprehensive, economically sustainable, national strategy for defense conversion.

As key elements of such a strategy, we recommend that the Executive Branch ad Congress collaborate on concrete steps designed to achieve the following broad goals:

—Integrating the defense and civilian industrial bases to serve new post-cold war economic and national security requirements;

—Providing incentives and removing barriers for defense industry diversification and conversion;

—Cushioning the impact of defense budget cuts on affected individuals and communities; and,

—Expanding funding for and DOD collaboration with civilian agencies on civilian technology development and commercialization.

The balance of the statement outlines several specific points on DOD programs and budgetary priorities that support these general goals. Specifically, as matters of high national priority, we must:

Increase DOD's investment in the defense technology base

IEEE—USA's support for technology base funding reflects two fundamental facts: First, as the defense budget decreases, the resulting smaller force structure coupled with the demand for greater mission flexibility will increase our reliance on the technology base, particularly for basic and applied research directed at major potential technology breakthroughs. Second, the defense technology base is also increasingly indistinguishable from the national technology base. As a major consumer of technology and of science and engineering manpower, DOD can and should sustain that technology base.

For these reasons, we strongly endorse the President's pledge to sustain funding of the technology base at current levels despite overall defense budget cuts.

Maintain a strong and rapidly adaptable manufacturing segment in our economy by funding some hardware beyond the development and prototyping phases to establish production lines and construction of production hardware on hard tooling.

To assure the ability of our defense to reconstitute in times of need, it is essential that we invest in advanced manufacturing technologies and processes that will enable the rapid integration and deployment of new technologies. We must also maintain a viable national manufacturing base, along with the attendant expertise, that is responsive to defense needs, i.e. capable of providing a significant quantity of military assets within a specified lead time. To ensure the ability to reconstitute, it is essential that some at the new leading edge defense hardware proceed beyond prototype through the actual production stages.

Leverage the DOD investment in R&D by targeting the development of multiple-use technologies—i.e. technologies which have defense and commercial applications (commonly called dual use), as well as contribute to the quality of life (such as environmental quality, efficient and affordable transportation, communications, health delivery, and education).

IEEE—USA welcomes President Clinton's emphasis on dual use technology development in the FY 1994 DOD budget request as well as in the President's FY 1993 Defense Reinvestment and Conversion Initiative. As the focal point within DOD for the President's defense reinvestment technology program, the Advanced Research Projects Agency (ARPA) has shown itself to be a capable manager of current defense technology programs and we support that lead role. We believe, however, that the emphasis on multiple/dual use technology should be expanded throughout the tri-services and the defense laboratories. We note, for example, the dual use technology development and commercialization successes within the Innovative Science and Technology programs of the Strategic Defense Initiative Organization.

An increased DOD emphasis on dual use technology will provide the bare technology for improved global competitiveness leading to new product developments and sales. This increased commercial activity resulting from the increased focus on dual-use technology will provide job opportunities for a number of the scientists and engineers displaced by the defense downsizing. In addition, the transfer of these scientists and engineers from DOD related efforts to commercial enterprises will enhance the overall technology transfer.

Assist scientists and engineers displaced by defense budget cuts to make smooth transitions to new nationally beneficial careers.

The large number of scientists and engineers that have been and will be displaced by defense budget cuts will find it particularly difficult to make career transitions in today's economy, even more so than their predecessors who after previous wars were able to pursue new careers in what were then rapidly expanding high technology industrial sectors. We believe that the nation's competitiveness and quality of life is dependent on the skills and expertise of displaced defense scientists and engineers being quickly put to productive use in the commercial sector.

To that end, special consideration should be given to the retraining and placement of displaced scientists and engineers through such mechanisms as corporate and personal tax incentives for relocation, in-house retraining, and educational grants and scholarship programs. We also support credential programs that enable scientists and engineers to pursue careers in K–12 math and science education, fully portable pension benefits for displaced defense workers, and funding to support retraining and placement programs administered by professional associations to assist displaced defense scientists and engineers.

Task the national laboratories to put defense scientists, engineers, and technicians to work in cooperative ventures with industry on critical technologies and manufacturing processes with civilian applications.

The sophisticated weapons systems on which our defense increasingly relies are made possible by the development, direction, and testing provided by the DOD laboratories. Future weapon capabilities of our military will remain dependent on the expertise resident at the DOD laboratories and their continuing interaction with the university and industrial participants in defense R&D.

While recognizing the imperative of streamlining the DOD structure in response to new budgetary realities, we also believe that DOD laboratories can, and should, play a role in transitioning defense technology to commercial products and improving our quality of life. Accordingly, we urge Congress and DOD to expand the role of those DOD laboratories which can serve as centers of excellence in the development of multiple-use technologies and promote technology transfer.

Support reforms to the defense procurement process that would remove barriers ad provide incentives for defense industry diversification and conversion and promote integration of the industry base.

We call upon Congress to support efforts to review and eliminate cumbersome DOD procurement regulations which have resulted in a unnecessary and wasteful segregation of our civilian and defense industrial bases. Not the least of these barriers are attitudes shaped by the unique demands and requirements imposed on defense contracts including ambiguous accounting standards and acquisition regulations, extensive and highly specialized DOD specifications that often result in unnecessarily DOD-unique products and processes, excessive security classification, and handling of data rights.

Among useful steps that could be taken, DOD should adopt similar standards for procurement that facilitate the use of multiple-use components, expand and accelerate implementation of the "Exemplary Facility" program which relieves zero-defect qualifying companies from excessive oversight, and make a commitment to use commercial, off-the-shelf (COTS) parts unless a special military product is essential.

These steps will not, by themselves, result in integration of the defense and civilian industrial bases. By removing unnecessary defense-unique requirements that have forced defense contractors to establish separate corporate divisions for their defense activities and by opening the door to new civilian contractors, however, these and similar reforms will bring competitive pressures to bear on outdated cultural and attitudinal barriers that have served to separate defense and commercial worlds.

The IEEE—USA Defense R&D Policy Committee thanks the Subcommittee for this opportunity to make our views known. We stand ready to assist you as a resource for technical advice and policy perspectives on the critical issues confronting the nation and its defense.

STATEMENT OF THE LAHEY CLINIC

Mr. Chairman and distinguished members of the Subcommittee, thank you for the opportunity to submit written testimony for the Record to the Senate Defense Appropriations Subcommittee on behalf of the Lahey Clinic in Burlington, Massachusetts.

The decade of the 90's is witness to the change in our national priorities. Two of the driving forces of change being sought are "defense conversion" brought about by the end of the Cold War, and "health care reform" to counteract spiraling medical Costs. Lahey Clinic, a pioneering health care provider and research institution, proposes to pursue a plan of action specifically directed in support of both of these national priorities. In concept, the Lahey Clinic seeks to reduce (and ultimately eliminate) most post-surgery hospital stay through the implementation of an advanced, minimally invasive surgical system developed through the conversion of defense technology.

There is little doubt that substantial directly applicable defense technology is available for conversion to health technologies. Heads-up displays, virtual reality software, fly-by-wire controls, laser and microwave systems, fiber-optic communicators, robotic manipulators, and miniaturized sensors, cameras and optics are just some examples of relevant and convertible defense technology. The nation has already made substantial investments in these technologies; it makes sense therefore, to consider them as a peace dividend and convert them to civilian use.

Surgical care has become, by far, one of the most expensive forms of medical care. A one-year study of health care spending conducted by the Health Care Finance Administration (HCFA) concluded that the most expensive type of medical care is hospital care, with the majority of the expenses charged for surgery and postoperative recovery. Between 1960 and 1990, funding for hospital expenses rose from 42.5% to 54.7% of the total health care bill. However, in cases where new, minimally invasive procedures have been introduced, hospital expenses, as well as hospital stays, have decreased dramatically. Therefore, any effort aimed at decreasing the overall cost of health care must focus, in part, on reducing total surgical expenditures. One approach to cost reduction is to simply ration surgical services. However, a better approach, more in keeping with patient well-being, is to apply advanced technology to lower the cost of surgical services.

At Lahey Clinic, the average cost of minimally invasive laparoscopic gallbladder surgery is $4,586 versus $7,998 for patients who require traditional open surgery. This cost reduction primarily occurs because the hospital stay is reduced, from 5.5 days to 1.3 days, on average. It is because of this surgical trend that the Lahey Clinic is proposing to establish the Ambulatory Surgical Research Center as a demonstration of cost containment for health care through the implementation of defense conversion technologies in out-patient surgical procedures. While the Center will focus on minimally invasive laparoscopic surgery, the resources of the Center will also allow for major attention to all surgical procedures amenable to this approach.

Specifically, Lahey Clinic seeks to participate in the Defense Conversion effort by establishing a Surgical Ambulatory Research Center that converts DOD technology into civilian clinical use. The main work of this Center will be to develop the instruments and procedures for an advanced, minimally invasive ambulatory surgical system. At Lahey Clinic, we envision the surgeon of the future seated at a workstation and using "power gloves," or other controllers. These will command miniature robotic manipulators within the human body to carry out various surgical tasks such as cutting, stapling, cauterization and tissue removal.

Details of such surgery would be observed on a heads-up display provided to the surgical team via imaging goggles or a similar device. The manipulators are then inserted into the patient's body through natural openings or tiny incisions. A variety of sophisticated sensors and powerful data analysis techniques provides the system with a high degree of artificial intelligence. The surgeon operates "by wire" in the domain of virtual reality observing internal details via a 3–D visual image with computer-generated overlay, while the patient is in the next room or next town, or even halfway across the world. With this feature, the system will have a dual-use in that it can stabilize wounded soldiers through remote surgery on the battlefield of the future. The provision of virtual reality will also impart a highly valuable training capability; future surgeons will be able to perform simulated operations with sensory inputs and control outputs that are indistinguishable from real cases.

The concept of such an advanced surgical system is not new. What is new, however, is the approach which Lahey Clinic will implement through the establishment of the Ambulatory Surgical Research Center.

The proposed Ambulatory Surgical Research Center will be established by Lahey Clinic in the Greater Boston area. Lahey Clinic will organize and direct the Center with the help of an Advisory Committee that includes representation from leading surgical providers from New England and across the nation. Relevant defense technology will be obtained via cooperative agreements with various defense contractors such as Kaiser Aerospace Electronics (imaging goggles), Bolt, Beranek & Newman (interactive software), Rockwell International (manipulators), Phillips Labs (lasers), Link (trainers) and Honeywell (electro-optics). In a related area, Lahey Clinic has already started a cooperative program with a subsidiary of Kaiser Aerospace Electronics in studies to develop an endoscopic display system based on the Helmet Mounted Display technology originally developed for military aerospace applications.

This type of cooperative effort will serve as the model by which other defense technologies in the Center will be accessed.

Since its founding in 1923, Lahey Clinic has been dedicated to the provision of high quality medical care. Lahey Clinic's reputation has long rested on the skills of its surgeons. Lahey Clinic surgeons are on the forefront of medical expertise in surgery of the brain and peripheral nerves, heart, esophagus, bile duct, pancreas, kidneys, bowel, colon, and joints. The Clinic is a national center for a wide range of sophisticated surgical techniques that utilize state-of-the-art technologies. In order to obtain the newest technologies, Lahey Clinic has made a commitment to work with defense-related industry to develop and evaluate advanced technologies.

In one example, Lahey Clinic has instituted a collaborative program with Mitre Corporation to improve capabilities in computer-enhanced mammography. Also, as stated earlier, Lahey Clinic is working with Kaiser Aerospace Electronics to apply imaging goggles to endoscopic surgery. For Kaiser, this represents an important path to diversification, since the civilian version of the display will be made by them for sale in the medical equipment market worldwide. In these cases, it is defense contractors and government-sponsored technology that is being transitioned into the civilian marketplace.

Lahey Clinic is also at the forefront in current state-of-the-art ambulatory surgery. Of the patients that require surgery at Lahey Clinic, about a third of them receive care through ambulatory procedures whereby the patient enters and leaves the hospital on the same day. As a result, the Clinic has an enviable record, with one of the shortest average lengths of stay (6.4 days per case) among Massachusetts hospitals. The Clinic thus has a wealth of experience in this area, which will serve as an important resource for the proposed Ambulatory Surgical Research Center.

This approach of minimizing postoperative hospital stay is referred to as ambulatory (or minimally-invasive) surgery. In cases where such surgery has been introduced, dramatic reductions in hospital stays have occurred. For instance, since the introduction of colonoscopy in the early 1970's, patients with colonic neoplastic polyp disease now undergo a one-hour ambulatory procedure that replaces what was an average eight day hospitalization. The cost saving is profound and the patient benefit is dramatic. One example of cost-saving technology already providing an impact is the TULIP procedure (transurethral laser induced prostatectomy). Developed at Lahey Clinic, this procedure has reduced the hospitalization stay of some prostate surgery to one day from the traditional five days. Soon, we at Lahey Clinic anticipate that this will become an ambulatory procedure which will further reduce inpatient hospital costs. Within the past four years, the development of videolaparoscopy with the addition of a few specialized instruments has converted a cholecystectomy procedure that usually required a five day hospitalization to a one day or ambulatory operation. It is estimated that this year alone, more that 80 percent of all cholecystectomies will be performed laparoscopically.

With current laparoscopic procedures, access is obtained through small (one inch) incisions through which are passed a variety of long-handled tools and endoscopes to evaluate and treat the tissues of interest. This new technology often converts inpatient procedures to out-patient procedures with significant reductions in trauma, recovery period and cost. This new technology is a major step forward; however, it still has two drawbacks. First, it requires a team of physicians and nurses to be assembled in a physically confined space with the necessity to access the patient, and second several aspects of the technology are in need of major improvement.

The advanced surgical system to be developed through the proposed Ambulatory Surgical Research Center will overcome both drawbacks. First, by virtual reality and telepresence, surgeons will be able to operate from workstations physically removed from the patient. Second, an entire class of manipulators, tools and sensors will be added to upgrade or replace current instrumentation. The system will be modular in that different "plug-in" elements will be used as required from the procedure at hand. In this way, the basic system along with the various modules will be able to carry out a wide range of surgery at various locations in the human body.

In addition, the proposed Ambulatory Surgical Research Center will develop an advanced system and associated clinical procedures to provide minimally-invasive surgery at lower cost and with less trauma. The Center will serve as a focus for collaboration with defense contractors to adapt and incorporate their technology into the surgical system. Specifically, the plan is to develop approaches that convert conventional operations that result in several days of hospitalization to minimally-invasive procedures that can be done on an ambulatory basis. Additionally, surgeon training will be implemented using the virtual reality feature of the system.

The surgical procedures to be targeted for improvement will be those which are (*a*) performed frequently and (*b*) require an extended postoperative hospital stay. The key candidates to be examined further are:

Endoscopic sinus surgery

Endoscopic sinus surgery has gained wide acceptance since its introduction in the late 1980's. Complex sinus anatomy and troublesome bleeding lead to complications, which vary in severity from lacrimal duct stenosis to blindness and leakage of cerebrospinal fluid. To reduce complications and make surgery safer, we propose to develop instrumentation combining the best of video and imaging technology with Kaiser developed DOD technology.

Middle-ear endoscopy

Endoscopic neurotologic out-patient diagnostic procedures have been developed for the examination of the middle ear and eustachian tube in their natural states and have reduced the number of exploratory surgeries performed. These procedures will be augmented with therapeutic modalities such as CC_2 laser power delivered via an infrared fiber bundle. This approach will open a new phase of out-patient treatment of several clinical conditions currently performed on an in-patient basis.

Laparoscopic colon surgery

Conventional colon resection is frequently required for the treatment of colon cancer, diverticulitis, and inflammatory bowel disease. Operations on the colon and small bowel involve work areas covering the entire abdominal cavity. Access, exposure and visualization are complex. Initial efforts at laparoscopic assisted colon resection have been encouraging, enabling selected patients to be discharged in an average three to five day stay rather than an average eight to ten days for open colon resection.

If a health care facility is to offer state-of-the-art treatment to the patient, then it is required to be proficient in the delivery of new capabilities. When new procedures in surgery are developed, they can be disseminated not only by conventional means, but also by electronically assisted means (e.g., virtual reality) for programs which would teach new skills and decision making without reduced expenditure of effort or time on the part of the surgeon. By using a virtual reality trainer, surgical residents, as well as established surgeons, could learn a new procedure reliably and efficiently before he/she has to perform the operation on a patient. In essence, the same process that prepared a pilot to fly new aircraft under a variety of conditions (by virtue of flight simulators) can be applied to surgical technique training.

Image stabilizing surgery

Tracking and image stabilizing technology presently used by the Department of Defense could be applied to cardio-thoracic surgery to allow coronary bypass surgery to be performed on a beating heart without the need for cardiopulmonary bypass. This would appreciably decrease the morbidity and mortality associated with heart surgery and undoubtedly translate to a shorter hospital stay.

Commercialization for global competitiveness

After development, testing and clinical qualification are complete, the advanced surgical system will be introduced into the medical instrumentation marketplace. The system will have a wide range of customers. Traditional teaching hospitals will buy the system both for its state-of-the-art surgical capabilities and its ability to improve teaching. Community hospitals will buy it to improve the surgical procedures they perform, and as an updating tool to broaden the skills of their surgical staff. Of course, substantial demand can be expected from major hospitals. In addition to normal hospital use, future possibilities include incorporation of the system into mobile units for hospitals serving rural populations. In such a scenario, the surgical specialist will operate by telepresence from the hospital while the patient will be treated by wireless data link in the mobile unit.

In addition to the domestic market, sales will also occur internationally, first in the developed world and subsequently elsewhere. Sales to international markets represent a major avenue for balance of payments improvement since improved health care for the third world has been identified as a major growth industry (and is also important to global security). In addition to equipment sales, there will also occur, with time, the sale of services of United States surgical specialists to carry out or assist remotely in procedures overseas from U. S. based workstations.

The military will also benefit from this system both in training as well as practice. Military units will allow a wounded soldier to be stabilized surgically with access to the best specialists via telepresence. The military is also likely to show special interest in the teaching feature, which will allow surgical treatment of realistic, simulated battlefield injuries in peacetime.

Lahey Clinic expects that the system will be marketed by a firm that understands medical marketing and sales and has broad representation in a wide range of territory and surgical specialties. Examples of such firms could include Johnson & Johnson and General Electric. A suitable commercialization partner will be chosen when a prototype system is undergoing initial trials.

Mr. Chairman, I ask for your serious consideration and support for this innovative and timely initiative within the fiscal year 1994 Department of Defense Appropriations bill. Lahey Clinic is prepared to utilize its resources in moving this effort forward, and we are excited about this unique opportunity in meeting two vital national priorities.

Thank you Mr. Chairman and members of the Subcommittee for the opportunity to submit written testimony for the Record.

STATEMENT OF THE MASSACHUSETTS FOUNDATION FOR EXCELLENCE IN MARINE AND POLYMER SCIENCES, INC.

I am pleased to present testimony on behalf of a group of cities and communities in California, Maryland, Massachusetts, and Vermont that are involved in testing and demonstrating a very exciting new technology for reviving and reusing wastewater. The cities and states are putting their own hard-pressed resources into this potentially revolutionary—but still experimental—technology, and are pleased that this Committee has provided funds to EPA to assist in demonstrating this environmental technology. The data from the four locations where the new technology is or will be tested, taken together, and in accordance with EPA guidelines, will provide the best conceivable basis for determining the extent to which this technology could be adopted on a national scale. The four locations represent varied geographical conditions so that the results will represent a true cross section of our country.

The purpose of advanced ecologically engineered systems is to treat wastewater and its by-products by using natural processes of sunlight, plants, and animals in a carefully balanced ecosystem. Untreated or inadequately treated sewage, septage and sludge have become one of the world's most pressing problems, causing the contamination of drinking water supplies and coastal marine waters. This is a particularly acute problem in the U.S. because of our high rate of consumption and our "throw-away" mentality. However, public demand for environmental conversion and reuse of resources is growing. New methods for dealing with the protection of our waters are needed.

One ecological system that has been developed by the esteemed environmental scientist Dr. John Todd and his associated scientists and engineers throughout the United States removes both nutrients and toxic substances from polluted water by channeling it through a series of cylindrical tanks or raceways placed in rows inside a greenhouse. The tanks are exposed to sunlight and contain a carefully designed progression of bacteria, algae, snails and fish. Wastewater is pumped into the first tanks where microscopic bacteria attack or consume organic matter, thus causing their populations to grow. Algae thrive on the nutrients released by the bacteria, and they increase. Snails consume the algae, and the cycle goes on, all the while transforming the wastewater. Further on, different varieties of plants are grown on the surface of the water, allowing their oxygen-rich roots to fall beneath the surface where snails and higher organisms graze. In the last tanks fish such as tilapia and bass swim around in clean water. By imitating the way nature purifies water, only more quickly and thoroughly, this system represents a dramatic departure from conventional methods. These systems are now called "Living Machines," a term which captures both the biological basis and the complexity of approach.

The ecologically engineered wastewater system is truly revolutionary—not only because it uses new and unexpected ways of treating wastewater, but also because it asks all of us as citizens to change the way we think about what "waste" means. The old method of dealing with vast quantities of wastewater produced by our homes and businesses was to add chemicals to kill potentially toxic organisms and to neutralize toxic inorganic chemicals. Recently, the sheer volume of waste produced, combined with the existence of often dangerous new chemical compounds emanating from industrial processes, has put tremendous pressure on our existing wastewater infrastructure. Many dedicated sewage treatment professionals are seeking new and better ways to deal with this enormous problem. Cities throughout the country find themselves with outmoded and inadequate wastewater treatment facilities, and taxpayers are reluctant to pay for major new plants. New approaches—improvement of existing facilities as well as use of different technologies—are needed, so that wastewater treatment professionals will have an improved arsenal of techniques to use as they work to protect the health and safety of our people.

The principle behind ecological engineering is deceptively simple: let nature take care of breaking down the toxins in wastewater in its own way, that is, with natural organisms including microbial life forms, plants, and animals, using sunlight as a power source. In practice, however, the engineering of a dedicated living ecosystem containing hundreds or thousands of organisms, is phenomenally complex. It is only because of scientific breakthroughs in microbiology, plant science and pathology, biotechnology, and ecology/environmental science that have occurred in recent years that this kind of system engineering is now possible. Scientists now predict increases in efficiency with Living Machines, as compared with conventional technologies, of several orders of magnitude in the years ahead. This will lead to significant reduction in costs and improvements in space requirements.

It is also remarkable that a partnership among cities, states, the academic community, and the private sector has pioneered such an innovative concept. Each of the partners in the present activity has been seeking solutions to its particular wastewater treatment problems, using various scientific and technological approaches. The importance of linking the projects together, with EPA guidance and assistance, is that a body of information can be obtained that will provide a solid basis on which hundreds of localities around the country can base future wastewater treatment decisions. Now, so that the ecological engineering process can be used anywhere in the country, we need to continue testing the process under different climatic, water source, and operating conditions.

The Massachusetts Foundation for Excellence in Marine and Polymer Sciences is requesting the support of this committee in providing continuation funding from EPA in order to maintain scientific research, technology development, operation of demonstration greenhouses, and testing at demonstration sites, in the City of San Francisco, California, in Frederick County, Maryland, in Harwich, Massachusetts, and in the State of Vermont.

I ask this Committee to provide $4.75 million to EPA for FY 1994 for this activity. It is my expectation that EPA will agree to allocate the funds in the following manner: $1.75 million for the demonstration program in the City of San Francisco supported by this Committee last year, which will utilize the results obtained from a prototype research unit; $.5 million for second year operation of the demonstration greenhouse in Frederick County, Maryland, funded by this Committee last year; $1.25 million for development of a "Living Machine" designed to restore to life a seriously polluted lake in Harwich, Massachusetts; and, $1.25 million for an advanced greenhouse system in the State of Vermont.

STATEMENT OF MOUNT SINAI MEDICAL CENTER OF GREATER MIAMI

Mr. Chairman, and members of the Subcommittee, thank you very much for the opportunity to submit testimony for the record on behalf of the Mount Sinai Medical Center of Greater Miami. I believe that the State of Florida, with its strong health care industry and significant military population, should lead the nation in providing innovative solutions to easing the impact of defense drawdown on communities throughout the nation.

Mount Sinai Medical Center of Greater Miami recognizes this challenge and seeks federal support to help establish the Southeast Health Professional Training Center of Mount Sinai. A central mission of the Center will be to ease the immediate impact of the defense drawdown on workers, communities and companies in the Southeast United States, by providing a wide-range of health profession training services that include educational instruction, clinical teaching, and on the job training. Beyond addressing the human impact of the defense drawdown on workers, the Center seeks to address the economic consequence of the drawdown on communities throughout the U.S. and in particular, the southeast. Specifically, to respond to the estimated one million defense-related jobs that will be lost in the next five years, the Center will target critical health care professions that will require a large and expanding work force. To effectively match former defense workers to new occupations evolving in the health profession, the Center will develop a series of health training programs in collaboration with the Department of Defense as well as state and local entities.

Mr. Chairman, we request the Subcommittee support our Training Center by providing $3 million for fiscal year 1994 construction funding for the Medical Center of Greater Miami. Mount Sinai is prepared to dedicate substantial resources for the construction of the Center. Although the focus of the Center will be to ease the immediate impact of the nation's defense reinvestment efforts on communities throughout the Southeast, we recognize that the establishment of the Southeast Health Profession Training Center is but one small, yet critical component of the overall national vision to meet community defense reinvestment efforts for 1993 and beyond.

The present shift in federal resources from military uses to domestic programs poses enormous challenges for communities throughout the nation, including communities in the State of Florida. According to the Defense Conversion Commission, Florida ranks as one of the ten states with the largest estimated private sector job loses as a result of reduced DOD purchasing. The Commission estimates that approximately 38,000 private sector jobs will be lost in the State of Florida from 1991 to 1997 due to reduced DOD purchasing, including direct DOD purchases as well as indirect purchases made by prime contractors.

At Mount Sinai, we are convinced that local communities hold the key to effective and innovative solutions to easing the economic impact of the defense drawdown on workers. Moreover, the long-term success of any defense conversion program is linked directly to overall economic growth. Actions that ease the temporary economic impact of the drawdown, therefore, should be evaluated in light of its contribution to the nation's overall, long-term economic growth. If savings from defense are reallocated to effective private or public investment, eliminating jobs in the military sector could lead to actual job creation in the long-term. In this sense, the defense drawdown becomes an opportunity, not a hardship. Retraining programs should therefore focus on skills that can be matched to new occupations evolving in the economy that contribute to national priorities.

It is clear that the health care industry will be key to the nation's economic development in the next few years—particularly in the State of Florida. According to a recently released report by the Health Care Financing Administration, health care could cost $1.7 trillion by the year 2000—an average of $6,000 for every American. Despite the immensity of the health care industry, there is still a tremendous shortage of trained health technicians. South Florida, as one of the nation's largest health delivery states, faces a shortage of trained health technicians. Initiatives to retrain former defense workers in selective technologies that promise to alleviate serious health problems will complement the existing medical system and create job opportunities in the health care industry. A strong medical workforce dedicated to lowering the risk of serious disease and reducing the incidence of disease, contributes to overall reduction of health care expenditures. The recruitment of DOD civilian personnel, military personnel, and defense workers in the private sector to a health profession retraining program, will address the economic consequences of the defense drawdown and rising health care costs. Additionally, training former defense workers in the health profession will address the human impact of the drawdown by easing the difficult transition of workers from military job skills to domestic ones.

Mount Sinai is well positioned to establish a center for the retraining of former defense workers in the health professions. As a private non-profit hospital, Mount Sinai has become an international referral center for the treatment and diagnosis of disease. Annually, Mount Sinai provides care to more than 18,000 inpatients, 30,000 patients in the emergency room, and more than 40,000 scheduled outpatients. In addition, more than 2,000 births occur at the Medical Center per year.

Additionally, it provides a broad range of services in its many "Centers of Excellence", including its comprehensive Center of Excellence in the area of cardiac diseases, neuroscience, programs for the elderly, cancer diagnosis and treatment, and pulmonary disease.

Drawing on the wealth of educational programs and services which Mount Sinai already has in place through its many Centers of Excellence, Mount Sinai will significantly expand its focus of meeting the needs of the community through the Southeast Health Professional Training Center. The Center will provide a model approach to the training and education of individuals, including former military personnel, nurses and others, in health care technologies. Through a unique partnership between Mount Sinai, various state and local government and health officials, neighboring educational institutions, local defense-based companies, and local military representatives, the Center will actively work towards easing the impact of defense conversion on the worker, the community, and businesses. Ultimately, the Center will contribute towards the long-term economic growth of South Florida by training workers in skills critical to South Florida's growing health care industry. Specifically, the Center proposes to establish the following programs, subject to availability of funds:

—Target a set of critical health technologies that will be the key to economic development in the next few years. The Center will therefore identify shortages or potential areas of growth within the health profession to effectively match training programs with new occupations evolving in the economy.

—Develop in collaboration with the Department of Defense programs aimed at easing the immediate impact of the drawdown on workers by shifting military personnel from the defense industry to the health profession;

—Provide a new facility to house and equip programs and initiatives geared towards defense conversion. The physical facilities would be housed in a newly constructed building that would contain classrooms, meeting rooms, a career center, and an auditorium. These would be outfitted with modern educational and medical technology, including state-of-the-art video training facilities for instruction in related academic and clinical settings. The Center would also make use of Mount Sinai's existing facilities, including its own schools of Medical Technology, Nuclear Medicine, Diagnostic Ultrasound and Radiologic Technology.

—Assist in providing job placement in the Southeastern, United States, including South Florida, in the health care profession. Trained career counselors will help guide graduates to job opportunities in various medical settings, as well as emerging fields such as marketing of medical care by both the not for profit and for profit institutions.

—Track the job placement of its trainees so that the Department of Defense will have the data necessary to evaluate the program.

Mount Sinai Medical Center of Greater Miami is committed to this important initiative and are therefore requesting your help to establish a partnership with the federal government for this facility's development. This model training center will serve to advance federal efforts to reinvest valuable defense dollars into the growing health care industry.

Thank you for your consideration of this request.

STATEMENT OF THE NATIONAL ASSOCIATION OF PHYSICIANS FOR THE ENVIRONMENT

Mr. Chairman, thank you for the opportunity to appear before you today to discuss the National Association of Physicians for the Environment, and to make recommendations.

I am John Grupenhoff, Executive Vice President of the National Association of Physicians for the Environment, a recently formed nonprofit organization.

The purpose of my testimony today is to introduce you to this new organization; because of your responsibilities for overseeing the work of defense agencies, you will be interested to know of potential relationships.

We read in the *Journal of the American Medical Association*, March 24, 1993, that the U.S. Navy has just completed a major conference in Norfolk, Virginia on environmental protection and that the U.S. Air Force has moved its environmental laboratories under the direction of its Surgeon General, with increased emphasis on environmental quality research and development.

Six weeks ago the first national conference of the National Association of Physicians for the Environment was held here in Washington, D.C., co-sponsored by the American Academy of Otolaryngology—Head and Neck Surgery Foundation, Inc. Funding for the conference was provided by the National Institute of Environmental Health Sciences. Over 100 physicians and other health professionals attended the conference. Leaders from more than 20 medical specialties spoke about what those organizations are doing or can be doing to improve the environmental health of all our citizens, and internationally as well. It was successful beyond our fondest hopes. There was great enthusiasm for the more vigorous involvement by physicians in environmental matters.

The concept of a National Association of Physicians for the Environment was proposed originally in an article in the *Journal of Environmental Research*, enclosed with this testimony. That national association is now incorporated and has begun its work.

The concept is that an association be created by the national medical specialties to deal with the impact of environmental pollutants on the organs, systems or disease processes best known to them, to inform physicians, patients and the public about the impact of pollutants, and the necessary personal and public health steps that should be taken to reduce or eliminate those pollutants, and to involve physicians in environmental issues global in nature.

Our nation is not alone in having an association of physicians for the environment, because in Switzerland two years ago a physician named Dr. Werner Nussbaumer of Switzerland called for a Society of Doctors for the Environment and 3,000 practitioners joined. That movement has swelled into an International Society of Doctors for the Environment (ISDE) of which Dr. Nussbaumer continues as President. There are now in existence, or in formation, Societies of Doctors for the Environment in many countries internationally. Dr. John Kimball Scott serves as our delegate to that society. He is now at the ISDE annual meeting in Lucerne, Switzerland—one of the speakers at the meeting will be Mikhail Gorbachev, discussing his environmental organization, the Green Cross.

At our conference held here in Washington, a number of issues were discussed, the most prominent being:

—Air Pollution
—Ozone Layer Depletion and Health Effects
—Importance of Biological Diversity to the Physician Community
—Cancer and the Environment
—Pesticides, Herbicides, and Agricultural Toxics
—Lead and Other Heavy Metals

We intend to work on the issue of air pollution first, examining every impact it has on the human body, its organs and systems; not only on the lungs.

It will be expected that those medical society representatives who participate will provide a presentation about the impacts of air pollution upon the body organs and systems in which they specialize. These presentations will have been cleared with the appropriate peer review apparatuses of the medical specialty, developed in language understandable by the lay public, deal with what is known and what is not yet known about the impacts, lay out a suggested research agenda in detail, and provide appropriate literature references.

The National Association of Physicians for the Environment stresses the concept—that all appropriate physicians' organizations come together to examine air pollution (and other issues) from their own perspectives.

Dr. Al Munzer, President-Elect of the American Lung Association, in his presentation to the conference, stated that the nature of the connection between many bodily organs and systems and pollutants, such as air pollution:

". . . After all, it's not just the lungs and the lower respiratory tract, but also the eyes, the ears, the nose, and the skin that are exposed to environmental pollution. It's not just the lung that serves as a gateway for hazardous pollutants but it's also the gastrointestinal tract. It's not just lung cancer but also bladder cancer that's related to smoking. Lead may be inhaled through the lung, but it has its effect on bone, blood and the central nervous system. Carbon monoxide too gains access to the body by the lung, but has its greatest effect on the cardiovascular system. In all modesty, what other parts of the body lack is not a connection to the environment, but an organization committed to brining that relationship to the fore like the American Lung Association."

We hope that you will urge the DOD, in bill report language, to work with us in developing appropriate defense personnel education materials and videos based on this concept of dealing with air pollution.

The same approach will be used regarding other issues noted above.

One additional matter: Because of your demonstrated concern for the environment, I propose another, more ambitious concept to quickly bring into action many of the medicine/health organizations on environmental matters, whose leadership and staff will have to be convinced it is in their interest to do so.

The concept is to create a "Health/Medicine Commission on the Environment" or a "Commission on Environment and Medicine."

The national effort could be supported by you and your colleagues in the Senate and House.

The purpose of the Commission would be to have all elements of the health care community come together to work to improve the environment.

I would suggest that there be a planning meeting called, perhaps under your leadership, bringing together key leaders of the various constituency organizations, including medicine, nursing, allied health organizations, health and life insurance groups, medical media, hospitals, pharmaceutical organizations, biotech firms, and leaders of the various lay organizations, among others.

The leadership group would lay out a series of tasks to be dealt with by the field, which program would be introduced to a national conference pulled together, perhaps toward the end of the year, of all appropriate organizations in the medicine/health field, with environment leaders.

Also, inter-organizational committees would be developed on each environmental problem of significance (air pollution, water pollution, biodiversity, forest issues, etc.) which would cross-cut these organizations, so that there could be an interplay among these organizations on the various issues. These committees, when formed, would come up with action programs in each of the areas as to the impacts and opportunities relating to the environment.

I would also anticipate that funding for such an enterprise could be made available by pharmaceutical, medical and other organizations, and that a small staff could be set up to coordinate matters.

I can already think of a number of leaders from the medical pharmaceutical and biotechnology community, and the manufacturers and supply companies who provide surgical, medical and other materials to the medicine and health community, who would come forward to leadership positions in such an effort.

The commission report would give a wide range of actions that could be undertaken, including things like: development of manuals for the "greening" of physicians' and health care professionals' offices and hospitals; programs of physician and health professions education which would receive educational credit from their professional organizations, structured activity for international medical/environmental matters, development of public education campaigns, research programs, and so on.

I will not go into detail here because I am sure you can see in your mind's eye what is needed.

I raise this matter before the subcommittee because of your demonstrated interest in health and the environment.

I appreciate your giving me this opportunity to speak with you, and I will be happy to answer any questions you may have.

STATEMENT OF THE NATIONAL FEDERATION OF FEDERAL EMPLOYEES

Mr. Chairman and subcommittee members, on behalf of the National Federation of Federal Employees, (NFFE), we appreciate the opportunity to present our views on fiscal year 1994 appropriations for the Department of Defense (DOD). NFFE is the oldest and largest independent federal employee union and represents nearly 150,000 federal workers across the country, with approximately half employed by the DOD.

Over the last few years, we have witnessed dramatic changes in world events. These changes, while for the most part positive, have led to deep cuts in the DOD budget, resulting in the Bush Administration's drive to downsize. With the election of the Clinton Administration, we are hopeful that the President will keep his campaign promise of reducing the size of the federal workers through attrition only.

Although layoffs may provide a quick and dirty method of reducing employee surpluses and thus payroll costs, the Government should be concerned about the negative repercussions that often accompany such workforce reductions. In addition to the obvious impact on terminated employees, the remaining employees and the psychological stress on everyone concerned with the layoff process, involuntary terminations may result in a tarnished image for the Government, which may hurt its ability to recruit desirable employees in the future. Furthermore, as a model employer, the Federal Government should set an example for the private sector to follow.

NFFE requests that the Subcommittee take action to ensure that the DOD downsizes through attrition only, by appropriating and designating sufficient funds to fully staff and operate DOD agencies. Relocation programs should be expanded, and skill training programs should be developed to allow workers designated as "surplus" to acquire the skills necessary to be placed in vacant positions. In addition, programs that currently exist to encourage workers to voluntarily leave the Government should be expanded. This includes enhanced early retirement programs and voluntary severance incentives that are meaningful and enticing. For example, the government should consider eliminating the penalty on annuities for those who retire before reaching the minimum number of years of age and service.

In the event that it becomes impossible for DOD to downsize through attrition only, meaningful programs need to be established so that those workers let go do not join the ranks of those who are underemployed or unemployed. Again, the Government should establish model job training and job placement programs. In the past, the typical program set up by Federal agencies involved handing a dismissed employee a pamphlet on how to write a resume or referring him or her to their respective state employment center. Clearly this is not the effort employees want and expect from the Federal Government, nor is it the model that the private sector should follow. Currently, the Army operates a program called the Job Assistance Center which provides employees with resume and cover letter writing, training, and with interview preparation.

During the downsizing process, NFFE believes that restrictions must be imposed on contracting-out. NFFE has long been concerned about the serious problems with the management and control of contracting procedures along with the repercussion of such problems on the federal workforce. During the Reagan and Bush Administrations, contracting-out increased at a rapid pace due to the perception that the private sector was a much more efficient and cost-effective producer of goods and services than the federal government. However, time and experience have shown that the cost overuns and corruption that plague the contracting-out process are often more costly than the products themselves.

Despite the existence of the Office of Management and Budget Circular A–76, which establishes guidelines for contracting-out commercial and industrial-type activities, the procedures involved in converting these functions to the private sector are constantly abused and ignored. The results are cost overuns, shoddy workmanship, sole source contracts, and a waste of taxpayer dollars.

One of the greatest tragedies caused by increased contracting out is the Government's loss of institutional knowledge and expertise. Highly qualified federal employees are forced into early retirement, the private sector, or simply into unemployment because their jobs are contracted out. In many cases, the agency never retrieves the function because it no longer employs workers with the necessary skills. If the contractor performs poorly or consistently overcharges, the agency is virtually held hostage because the work must be completed. Congress must take steps to reform the contracting out process. NFFE is confident that in most cases, federal employees can operate an activity at a much lower cost than a contractor could.

Over the years, NFFE has appeared before the Subcommittee many times to discuss the civilian technician program. Civilian technicians have helped maintain the National Guard and the Reserves as an effective fighting force for many years. These technicians are called upon to provide full time administration, supply, training and maintenance support that has enabled each Reserve component to become a key link in our national defense structure. The Defense Department has recognized that civilian technicians are the group best able to accomplish the task of performing this critical mission. Today, technicians are stationed in every state and territory and at thousands of bases and armories, constantly ensuring that our forces are ready to meet any crisis.

As a cost saving measure, the Subcommittee should consider civilians to work in civilian clothes while they are in civilian status. Civilian technicians turn in uniforms rendered unserviceable due to wear and tear, and are reissued new uniforms at no cost to the technician. The replacement of only two utility uniforms for Wage Grade employees and one dress uniform for General Schedule employees costs the Government over $4 million dollars per year.

Furthermore, because the of current requirement to wear the military uniform while in civilian status, extra clothing and special equipment must be issued to each civilian technician. A study conducted in the mid-1980's based on an average of data compiled from five states, civilian technicians were issued over $9 million worth of additional equipment. If technicians were not required to wear the military uniform, this equipment could be returned to the supply system for reissue and substantial savings would result.

In these times of budget crisis and limited defense resources, Congress is looking at every possible way to reduce spending. Eliminating the requirement for civilian technicians to wear military uniforms is a feasible suggestion for cutting costs, with no adverse effect on readiness.

This concludes our statement. We appreciate the opportunity to present our views to the Subcommittee.

STATEMENT OF THE NATIONAL GUARD ASSOCIATION OF THE UNITED STATES

Mr. Chairman, we appreciate this opportunity to present testimony to your committee on behalf of the members of the National Guard Association of the United States to discuss the future of the National Guard. We recognize that this is a difficult time as the Congress attempts to balance competing priorities for our nation's limited resources. But we also believe that the end of the Cold War period presents our country with a unique opportunity to reevaluate both our defense and domestic requirements and to realign available resources to best meet those requirements. We are convinced the National Guard can perform a significant role in achieving that goal.

We are greatly encouraged by the actions of the Congress, the active services, and the leadership of the National Guard during the past year. The strength levels authorized and funded for fiscal year 1993 and the Army National Guard Combat Reform Initiatives directed by Congress should help significantly in improving the readiness and capability of the Army Guard in fulfilling its federal combat role. Agreement between the Army and the Guard leadership on a stable force structure level and on strength levels for fiscal years 1994 and 1995 should eliminate much of the turmoil and confusion that has resulted from the deep cuts proposed in each of the past several years and the subsequent upward adjustment by Congress. Programs, such as Project Standard Bearer, which will be discussed later, are being undertaken by the Army Guard to improve the readiness and accessibility of its forces, and should further resolve many of the problems identified during Desert Shield/ Desert Storm.

Finally, efforts to improve the National Guard relationship with federal emergency agencies such as FEMA, and the expansion of community support missions in areas such as medical support and youth-at-risk programs, should greatly improve the effectiveness of use of resources in its domestic missions.

CHANGING PRIORITIES

The emerging world order will continue to require involvement of the United States in a broad range of global challenges. As many policy makers pointed out at the close of the Cold War, the world did not automatically become a safe place when the East-West conflict ended. The abrupt realignment within several nations and the continuing turbulence in various regions during the past several years are testimony to the accuracy of their prediction.

National defense will continue to be based upon evolving foreign and domestic policies and the need to be prepared to protect and preserve our nation's democratic ideals. The requirements of the new world order demand a responsible level of national defense, not only as deterrence and protection, but also as support for our projected foreign policy role as the sole remaining superpower. The National Guard, functioning at both the federal and state level, has historically provided a cost effective foundation for our nation's defense.

While the future holds a new world order, there is little doubt that the public vision of the future is focused on a resurgence of domestic priorities. Successful pursuit of our domestic goals will depend upon an accurate evaluation of our international role and a balanced realignment of our foreign and domestic policies.

The recent debate over priorities for national defense and for domestic programs has been mirrored by the defense debate over the proper mix of active, National Guard, and Reserve forces as national defense resources are being drawn down. Both debates have been driven by a perceived reorientation of the worldwide military threat, but each has also been heavily influenced by a change in priorities within this country. None of these events has caused the National Guard Association to alter its belief that America's community-based National Guard can continue to serve as the most cost-effective element in the first line of defenses of the country.

The proposed Fiscal Year 1994 President's Budget, with exceptions, provides a balanced budget for the National Guard to continue performing in an efficient and cost effective manner. I have attached a brief summary of those programs which we believe are valid candidates for additional funding. The Association believes each of these programs will provide an essential service to our nation.

ROLES AND MISSIONS

Competition for resources between domestic programs and military requirements is certainly not new. The balance between the size of the standing military and the "citizen soldier" force, which later became the National Guard, has been used for centuries as the method of providing insurance against the unforeseen by maintaining a reasonable and affordable level of defense while pursuing domestic progress.

The roles and missions of the National Guard are founded on Constitutional intent and the Guard's unique dual status. Fulfilling both federal and state mandates makes the Guard unique among the U.S. military. It also underlines the Guard's vital importance in competition for adequate missions and resources in the future.

The federal military mission of the National Guard is to provide to the National Command Authority trained and ready combat and support forces available for call by the President. At the same time, the National Guard is charged to provide the Governors of the states and territories trained and capable units available for call and employment in times of emergency. Its members, by law, sign an oath of allegiance to both the Nation and the State. The federal mission training lays the foundation for the Guard's ability to respond to emergencies in the State and Territories.

Historically, the community-based National Guard force has been about .2% of the U.S. population in peacetime. Prior to WWII and the outset of the Cold War, the Guard ranged from 50 percent to 100 percent larger than the standing army. Also, prior to 1947 and the increasing demands of meeting the Cold War threat, the National Guard provided all of the unit-organized reserve forces for the Army; the Army Reserve provided an individual manpower pool.

As we approach the 21st century, National Guard forces must be sufficient to meet the mandates of their dual roles and missions. The federal mission will continue, as it has for more than two hundred years, to be the provision of forces for our nation's defense. In peacetime, the federal role of the Guard is to maintain combat ready forces and conduct training and peacetime engagement operations as dictated by the President and the Congress.

In addition to its traditional state mission of emergency and disaster response, the Guard's peacetime role also encompasses several activities which mix its federal and state role at times, such as the war on drugs, domestic efforts related to youth-at-risk, and rural and inner-city medical and other relief programs.

FIRST LINE OF DEFENSE

The National Guard, with its historical roots as this nation's militia, has provided forces in every major conflict since the founding of this country. As an integral part of this nation's defenses, the Guard represents a community-based force which is recognized as the first line of reserve strength to augment the active forces in the event of a national crisis. The ability of the National Guard to maintain combat ready forces to augment the active forces was again demonstrated by the recent experience of Operation Desert Shield and Desert Storm. When President Bush ordered troops to the Gulf on 7 August 1990, volunteers from the 228th Signal Brigade, South Carolina Army National Guard, deployed within four days. By the time the ground war had started, over 74,000 Army and Air National Guard members had been mobilized, with more than 43,000 deployed to Southwest Asia. Air National Guard aircraft flew and fought along with active Air Force units, while Coalition forces on the ground were supported by artillery, engineer and support troops of the Army National Guard. These soldiers and airmen made a significant contribution to the successful completion of the Gulf operation. The ability of the National Guard to mobilize, deploy, and fight as part of the Total Force was due in great part to the interest of Congress over the past ten years in the modernization, training, and professional education of the Guard.

Congressional guidance in the Fiscal Year 1993 Defense Authorization Act continued the effort to improve the readiness of National Guard units, particularly the Army National Guard. The introduction of the Combat Reform Initiatives (Title XI) will be very important in enhancing the ability of Army National Guard combat units to deploy in a shorter time frame, with the most ready units filled with qualified individuals and modernized equipment. Although several of the initiatives will be difficult to achieve in the near term, it is imperative that the National Guard continue to improve the readiness of its units and personnel by making the best use of resources, to include active advisors, full-time support and improved training programs.

We must also applaud the leaders of the Army and the National Guard for their efforts to continue to improve the readiness of Guard units through such initiatives as Bold Shift and Project Standard Bearer. As a result of the Gulf War, the Army has reexamined its training program, and under the Bold Shift initiative is developing an Operational Readiness Evaluation program. This program is modeled after the Air Force's readiness inspection program, which has contributed greatly to the ability to ascertain the level of combat readiness of Air National Guard units. Hopefully, this program will establish one standard to which all elements of Army, Army National Guard, and Army Reserve units must train to be considered combat ready.

The Army National Guard has developed a program called Project Standard Bearer to continue to emphasize readiness and to meet the requirement for Army National Guard units to deploy with active Army contingency forces, and as Roundup and Roundout units. Within this program, the National Guard is working to ensure that designated early deploying units are fully manned, totally equipped, and validated as trained to standard. This program will ensure units are available for missions within seven days of an alert. Both of these programs, along with the Congressionally directed Combat Reform Initiatives, are designed to enhance the readiness of the Army National Guard.

With the Army continuing to place emphasis on readiness and the Air Force transitioning the Air National Guard to the objective wing structure, both services are helping the National Guard fulfill its essential role as a full partner in the conventional forces defending our nation. This close interaction will become even more vital as the prospect of regional conflicts and humanitarian missions grow, while our total military forces shrink in size.

DOMESTIC MISSION

As we continue to emphasize the importance of the federal mission, the Guard also has the unique capability of using the forces provided for its federal mission to support individual states during a domestic crisis. Although the traditional state mission has been to respond to disasters such as Hurricane Andrew, floods and tornadoes, or to civil disturbances such as the Los Angeles riots, the scope of domestic missions has been recently expanded beyond those traditional roles.

One of the primary challenges on the current domestic agenda is to save a generation of youth who are at risk. The Guard is uniquely qualified to assist in this effort. Since Guard members live and work in the 3,200 communities where they serve, they are members of an organization that reflects the cultural diversity of this nation. To invest in the Guard is to reinvest in America.

Today this nation looks for ways to maximize the use of federal dollars, reduce the deficit and enhance the living standard of the poorest American. In looking inward, the Guard provides a way to contribute to all three. As a cost effective, on-call militia, the Guard provides a ready force at a fraction of the cost of maintaining a standing army, thereby freeing dollars that can be used to reduce the deficit or improve the economy. By utilizing the available resources in the Guard, we can accomplish some of the domestic missions that are being re-defined by the needs of the nation today.

The war on drugs has been on-going for almost a decade. New efforts are being made to address not only the interdiction of drugs, but also the education of American youth to reduce the demand for drugs. The Guard, as a community-based force, is uniquely positioned to support this alternative to drug use by establishing community outreach programs which offer alternatives to our children. This can be accomplished by involving at-risk youth in programs to teach productive life skills, participation in sports activities at armories, and improvement of learning skills. These learning skills can include computer literacy, math and science programs, and completion of a high school equivalency certificate.

The continued availability of the Guard as a state force to respond to natural and civil disasters is imperative. Maintaining a strong federal mission will provide the units necessary to respond to state needs. At the same time, these resources should be made available for reinvesting in America's future, our children.

CONCLUSION

Although it is assumed that no major conflict looms on the horizon, we must maintain our readiness to respond to a wide range of contingencies. By necessity, we should re-examine, restructure, and redirect the roles and missions of our forces. This can best be done by balancing the capabilities of the active, Guard, and reserve forces to provide the most effective mix at the lowest cost. Because of its proven ability to provide combat ready forces, its unique community-based organizational structure, and its dual federal and state role, the Guard offers an opportunity to provide a major portion of the forces needed for this country's defenses, while taking on the challenge of new domestic requirements with little additional cost.

None of this is without risk. Finding the optimum balance between the forces needed for future contingencies and domestic requirements and what is affordable, is a formidable task. The National Guard, both Army and Air, offers a wide range of capabilities that can contribute to both our national defense and to the rebuilding of America at an affordable cost.

The activities of the past year in establishing a more stable force level, and the programs being undertaken to improve the readiness and accessibility of National Guard units, will help to ensure our nation has the most cost-effective insurance available to meet the uncertainties of the future, both foreign and domestic.

NATIONAL GUARD UNFUNDED REQUIREMENTS

—Transition Assistance Program, $24.8 million
—Army National Guard O&M Cost of Higher End Strength, $188 million
—MEDRETES USA Program, $3.0 million
—Counterdrug Support Program, $42.3 million
—Drug Demand Reduction Program, $18.3 million
—National Guard Youth Programs, $79.9 million
—National Guard in Support of Democracy Program, $15 million

STATEMENT OF THE NATIONAL HEAD INJURY FOUNDATION

> *"Enlighten the people generally, and tyranny and oppression of body and mind will vanish, like evil spirits at the dawn of day".*—THOMAS JEFFERSON, 1816.

I would like to take this opportunity to thank Chairman Daniel K. Inouye and the committee for giving me the opportunity to testify today and to thank the committee for your support of the Defense and Veterans Head Injury Project. I want you to know that the Defense Department and Veterans Administration have worked cooperatively, with the National Head Injury Foundation, and as a result, their project is off to a very good start. This has been made possible because of your support.

My name is George Zitnay. I am President and CEO of the National Head Injury Foundation (NHIF), which is a national advocacy organization for survivors of traumatic brain injury (TBI) and their families and the professionals who treat them. We are dedicated to improving the quality of life for persons with TBI and their families and to promoting prevention of brain injuries.

Each year, two million Americans sustain a brain injury. The NHIF is a membership organization which serves the survivors of brain injury, family members, professionals and providers of services. We have state associations in 47 states, with over 400 local peer support groups and a host of affiliates. The NHIF provides information, educational materials, support, and direction to national, state and local resources to the more than 10,000 people with head injury, family members, friends and professionals who use the NHIF's Family Helpline (800–444-NHIF) each year.

I want to share with you the progress to date on our joint collaboration with the DOD/DVA on the Defense and Veterans Head Injury Program (DVHIP) and thank you for your support on behalf of the military personnel and veterans with head injury and their family members who have benefited from the DVHIP already, and the many more who will in the future. I am also here to ask you for your further support. As you know, the first phase of DVHIP is a registry of military and veterans personnel sustaining brain injury, in order to track their progress and treatment as part of a clinical outcomes research study, in order to find out what works and what doesn't work in brain injury rehabilitation.

The military and veteran's facilities selected to participate in DVHIP are the very best in traumatic brain injury programs in the DOD/VA system:

MILITARY FACILITIES

Walter Reed Army Medical Center, Washington, DC; San Diego Naval Medical Center, San Diego, CA; Wilford Hall Air Force Medical Center, San Antonio, TX.

VETERANS FACILITIES

Tampa Veterans Medical Center, Tampa, FL; Minneapolis Veterans Medical Center, Minneapolis, MN; Palo Alto Veterans Medical Center, Palo Alto, CA; Kansas City Veterans Medical Center, KC, MO; Richmond Veterans Medical Center, Richmond, VA.

The details of the current project are provided by DOD in the addendum to my testimony.

NHIF began receiving phone inquiries from hill staff and the public soon after the initial Appropriations Bill was signed, so we learned early how great the need was for military and veteran's families to make contact with others in their community who sustained brain injury. Calls from people involved with the DVHIP and who learn about the NHIF Family Helpline through the military and VA have been increasing steadily. It should be no surprise that the people who are contacting NHHIF want services: TBI rehabilitation services, counseling, community based support, support groups, peer counseling, employment training and retraining in addition to the information and educational materials they receive from NHIF.

Individuals contacting NHIF's Family Helpline thus far are primarily family members of military personnel and veterans with a brain injury. In a few cases, service personnel and veterans contact NHIF directly. Dates of injury range from August, 1955 to March, 1993, though most contacts were from individuals sustaining injuries within the last five years. Some of the individuals contacting NHIF had received (or are currently receiving) rehabilitative services through the Department of Veterans Affairs, many were in the process of appealing benefits, and some individuals had heard of the Program through NHIF's State Association network and were interested in being included in the registry. Each inquiry was handled individually, with information and referral provided according to the caller's specific request.

I want to share with you samples of what some of the callers to our Family Helpline have experienced and what the NHIF is doing to help them. Each of the callers to the NHIF Family Helpline are entered in the DVHIP Registry. In addition, each individual was provided immediate assistance, information, educational materials and linked to resources tailored to their specific request.

A short summary of some selected inquiries appears below:

The spouse of a serviceman from Hawaii called for information about mild traumatic brain injury and available resources for assistance. Her husband was enrolled in the Walter Reed mild brain injury program at the time of her call, and she was concerned about his imminent return to home and how to deal with the sequelae of his injury within the family. NHIF answered her questions about mild brain injury, and provided educational materials on the topic. Additionally, we contacted the serviceman's case manager at Walter Reed to coordinate support and community services with NHIF's Hawaii's State Affiliate upon his return home.

The father of an individual who sustained a traumatic brain injury in a motor vehicle crash while on active duty in the Army contacted NHIF with concerns about his son's Line of Duty determination. The serviceman had been denied VA benefits when the decision was made that his injury was not sustained in the line of duty. The father was provided direction to legal resources and given information about the appeals process. Additionally, information and educational resources were provided to the family, and they were put in touch with the Massachusetts Head Injury Association for assistance in accessing local support resources. Within one month, the Line of Duty decision was reversed, and the serviceman is currently receiving rehabilitation services.

The sister of an individual who sustained a traumatic brain injury after his discharge from the Navy contacted NHIF seeking information about brain injury to help her better understand her brother's condition. She was also interested in finding out about medical and rehabilitative services available to her brother through the Department of Veterans Affairs. Educational materials about traumatic brain injury were sent, and she was put in touch with the NHIF State Association in Pennsylvania for the purpose of providing family support groups. Additionally, she was provided information about veterans' benefits and medical services, and provided information about nearby Veterans Medical Center facilities.

The mother of a First Lieutenant in the Air Force contacted NHIF from Minnesota. Her 25 year old son sustained a traumatic brain injury in October, 1992, and is currently receiving rehabilitation services at the Minneapolis Veterans Medical Center. She requested information about head injury and its effects to help her understand her son's condition. She was provided educational materials about head injury, and put in contact with the Minnesota Head Injury Association for guidance and direction to local support resources.

The aunt of a 20 year old Navy seaman contacted NHIF from Michigan seeking information to help her understand her nephew's condition and the progress of his rehabilitation. Currently in the Minneapolis Veterans Medical Center, her nephew is making slow progress after an injury in December, 1992. The caller was provided educational materials about traumatic brain injury and rehabilitation, and NHIF Information and Resources staff answered many of her questions related to specific rehabilitation and therapy issues, including questions about what to expect in terms of progress. Additionally, she was directed to the Michigan Head Injury Alliance for local support group assistance.

The mother of a 19 year old serviceman who sustained a traumatic brain injury while on active duty in the Navy in February, 1992 contacted NHIF requesting information about how to monitor rehabilitation services her son is receiving at the Tampa Veterans Medical Center. She was concerned that the level of therapy being provided was insufficient for his needs. NHIF staff answered specific questions and provided educational materials, including the *Guide to Selecting and Monitoring Head Injury Rehabilitation Services.* We discussed with her the individualized nature of service delivery after head injury, and suggested she speak with her son's physician and treatment team to better understand the level of services being provided to her son.

The mother of a 20 year old Navy serviceman called requesting information about brain injury and its effects. Her son was injured as a pedestrian struck by a car in October, 1992, and is currently on convalescent leave from the service, with a psychological evaluation scheduled at Portsmouth Naval Hospital in several months. Information and educational materials about head injury and its effects were provided, and the mother was put in touch with the NHIF State Association in her state for linkage to support resources.

I hope these selected vignettes provide you a sense of the broad nature of issues and questions which arise for military personnel, veterans, and their family members after head injury.

The NHIF is assisting the DVHIP Centers to train their case management staff, and has drafted the *DVHIP Case Manager Training and Resource Manual.* The Veteran's Administration Vocational Rehabilitation Services (VA/VR) has asked NHIF to assist in identifying ways VA/VR Counselors can become better educated about brain injuries in an effort to improve the accuracy with which veterans with head injury are identified and served. And, NHIF in conjunction with personnel from DVHIP Centers will begin development of a Home Guide for people randomized into the community based component of Phase II of the DVHIP.

Phase II of the DVHIP (which will last for five years) will design and implement model treatment programs in the context of a controlled multi-center clinical research outcome study. Until now, the DOD and the VA often have to place its people with brain injury in private for-profit facilities, sometimes at a cost of over $1,000 a day, because appropriate head injury services simply have not been available in military/veterans facilities. There is a limited ability to monitor the quality of the care received in outside facilities and I am sure you are aware of recent publicity about possible financial abuses in the brain injury rehabilitation industry. It makes more sense to develop brain injury programs within the military/veterans system, where services can be monitored and studied and where the treatment modalities fit in with the overall research design of DVHIP and cost effectiveness is assured. We expect that care for people with severe brain injuries can be provided under the research protocol for $285 a day, and $100 a day for those with moderate injuries. The cost effectiveness of this approach is quite evident, and the quality of services provided can be protected.

In addition, NHIF has learned that there is a tremendous unmet need for long-term community based services. Often, active duty military personnel who are fortunate enough to receive any rehabilitation, are discharged from active duty after acute rehabilitation. They then languish in the community without services, with no access to services, and quite literally, no where to turn. All of the academic research on brain injury indicates that much more is needed after the acute rehabilitation phase and that community services have the most important and longest lasting impact on the individual. The military and veterans system needs to provide the same kinds of community based services available to the general population. Phase II will bring the military out of the dark ages of brain injury rehabilitation to bring state of the art services to those in need.

This team of experts plan to study violence and its relationship to the brain, with additional support this research and treatment project can impact on the increase in criminal behavior in the United States.

Thank you again for your support of persons with head injury and the NHIF. We are making significant progress which will improve the quality of life of military personnel, veterans with head injury, and their families through improving the quality of services available to them in the context of a carefully controlled and monitored research agenda.

This is one of the most significant collaborative research and treatment projects underway. To continue this important work, I urge you to support the $6 million which has been included in the President's budget and to include an additional 1.1 million for DoDHA, to expand the treatment available to military personnel and their family members with brain injuries and to support the initiation of the study and treatment project of violence and the brain and its relationship to crime and criminal behavior in the United States. Thank you for your support. I look forward to working with you and can assure you many military personnel, veterans, and their families will benefit directly from your endeavors.

DEFENSE AND VETERANS HEAD INJURY PROGRAM (DVHIP)

A JOINT DOD/DVA TRAUMATIC BRAIN INJURY REGISTRY, EVALUATION, AND TREATMENT PROGRAM

Executive summary.—Traumatic brain injury (TBI) is the principal cause of death and disability for young Americans, at an estimated cost of some $25 billion per year. Important advances have been made in prevention and acute care, yet the costs of TBI rehabilitation have been growing exponentially. This in spite of the fact that few, if any, TBI rehabilitation modalities have been subjected to the degree of scientific scrutiny for efficacy and cost efficiency that is usually applied to other medical treatments. The escalating economic burden that TBI places on individual families, as well as on society, is unlikely to be controlled until this issue is resolved.

By virtue of the relative uniformity and accessibility of their populations, as well as their existing facilities, the Department of Defense (DOD) and Department of Veterans Affairs (DVA) health care systems offer a unique peacetime setting in which to address this national problem. TBI accounts for over 10,000 peacetime admissions to DOD and DVA hospitals each year, and over 40% of wartime fatalities. DOD is conservatively estimated to spend over $130,000,000 per year in direct costs of TBI care alone. Until this year, however, there had been no systematic program for providing TBI-specific rehabilitation within the DOD or DVA. The Defense and

Veterans Head Injury Program (DVHIP) was established for this purpose in January 1992, in response to a direct appropriation in the Defense budget for fiscal year 1992. Patient tracking and coordination of data collection and analysis is being carried out by a central office in close collaboration with seven regional military and DVA TBI Centers, and the National Head Injury Foundation (NHIF).

Objectives.—To "learn as we treat". To ensure that military and DVA traumatic brain injured patients receive TBI-specific evaluation and follow-up, while at the same time collecting standardized patient outcome data that will allow comparison of the relative efficacy and cost of various TBI treatment and rehabilitation strategies, and definition of optimal care for victims of TBI.

Phase I of the program includes: (1) establishment of a DOD/DVA TBI patient Registry and tracking system; (2) establishment of a national network of TBI centers at major military and DVA hospitals; and (3) establishment of a standardized patient outcome evaluation program at each of these centers. These strictly standardized patient evaluations serve as the basis for Phase II.

Phase II has begun in FY93 and will continue for a minimum of five years. It includes design and implementation of model TBI rehabilitation programs developed in the form of controlled, multicenter clinical outcomes research studies. These will evaluate the efficacy and cost efficiency of specific TBI treatments while at the same time providing "state-of-the-art." care. Use of existing DOD and DVA facilities allows us to offer TBI treatment at a fraction of the cost in the private sector.

BACKGROUND

There is about one traumatic brain injury (TBI) hospitalization per minute in the USA; TBI is the principal cause of death and disability for young Americans, at an estimated overall cost of some $25 billion per year. Similarly, TBI accounts for over 40% of fatalities and at least 14% of surviving casualties in combat, and for a disproportionate amount of acute and long-term combat casualty care resources. In peacetime, there are about 10,000 TBI admissions to Department of Defense (DOD) and Department of Veterans Affairs (DVA) hospitals each year.

Since the Vietnam war, we have come to recognize that it is usually inappropriate and counterproductive to lump the postacute management of TBI with that of other neurologic disabilities, and that most TBI patients would benefit from at least some level of specialized, multidisciplinary rehabilitation. In the past decade there has been a profusion of mostly private, and often very expensive TBI rehabilitation programs throughout the nation. These have filled a vacuum in TBI care, but the exact form and intensity of TBI rehabilitation required for a given patient remains hotly debated. Few, if any, programs or program elements have been subjected to the degree of scientific scrutiny for efficacy and cost efficiency that is usually applied to other medical treatments. In particular, the remarkable ability of the young adult brain to compensate for injury naturally with only minimal intervention and targeted counseling at home has often not been considered in the evaluation of outcome from various trea tments. For example, over 55% of head injured Vietnam veterans were gainfully employed some 15 years postinjury with no formal TBI rehabilitation. The relative paucity of objective program evaluation has in turn made it difficult to focus rehabilitation efforts on those elements most likely to return the patient to independent living and gainful employment. Some institutional programs may even be counterproductive, particularly if they inadvertently foster continued dependence in the patient.

These questions are unlikely to be satisfactorily resolved other than by properly designed clinical outcomes research studies. The DOD and DVA health care systems offer a unique peacetime setting in which to address this national problem. Their populations are relatively uniform (young, healthy, and employed preinjury); and use of their existing facilities and medical networks would not only decrease costs considerably, but would facilitate the standardization which is essential for proper multicenter studies.

Plan

The Defense and Veterans Head Injury Program (DVHIP) was established in response to a direct appropriation in the DOD Health Budget for fiscal year 1992, in order to help find solutions to the problem of TBI management in the military and DVA in particular, as well as in the nation as a whole. At present the DVHIP includes seven regional military and DVA TBI Centers and a central office coordinating patient tracking, study design, data collection and analysis. Another fundamental element of the program is a close collaboration with the National Head Injury Foundation (NHIF).

Phase I. Patient registry and evaluation

Given the relative paucity of our knowledge regarding the relative efficacy of current TBI treatment programs, the initial treatment objective of this project is to prospectively evaluate the outcomes of patients undergoing current TBI treatments, rather than to specify or prescribe what those treatments should be throughout the entire DOD and DVA systems. Nevertheless, the evaluation program is expected to improve treatment by its "sentinel" effect in recapturing patients lost to follow-up, as well as by providing ongoing objective feedback to therapists. This "active treatment cycle" model, which periodically reevaluates the functional deficit and restates functional goals of treatment is particularly relevant to the TBI patient, who is often considered to have a "dynamic prognosis". The basic core evaluation includes neurologic, psychiatric, cognitive, rehabilitation, and psychosocial assessments, as well as magnetic resonance imaging (MRI) and advanced computerized electroencephalographic monitoring. This core battery will be standardized, and thus interchangeable at all seven national centers. Individual centers with a particular expertise will develop additional specialized evaluations. These include more detailed speech and language and frontal lobe testing, as well as functional MRI and PET scan studies at the Walter Reed Army Medical Center (WRAMC).

Finally, the increased interaction and consultation that is expected to occur between regional TBI centers and the local facilities should also significantly improve patient care.

Phase II: Model treatment programs (FY93–97)

One of the overall goals of this project is to integrate clinical outcomes research into the treatment of TBI patients. Model treatment programs will be developed primarily in the context of conducting controlled multicenter clinical research outcome studies at the participating TBI centers. Thus, each center will be expected to conduct both treatment and outcome evaluation, albeit by separate personnel. In keeping with their basic missions, it is expected that military hospitals will treat moderate TBI victims who are expected to return to duty or work, while Veterans medical centers will generally concentrate on more severe, chronic TBI survivors. The details of each treatment protocol will be arrived at jointly by the members of the Directorate. In general, however, a given TBI center would be expected to randomize patients to one of two alternative treatment strategies, and follow their outcome for at least two years postinjury.

In order to allow for structuring of the model treatment programs in accordance with strictly designed clinical outcomes research protocols, and because such dedicated TBI treatment programs do not generally exist at present in the military and DVA systems, the added expense of establishing them should be included in the budget of the DVHIP; the combination of clinical treatment and clinical research funds for this purpose is not uncommon.

Four basic classes of TBI rehabilitation programs will be targeted at various patient functional levels. In general, for comparison purposes, at least two alternative treatment strategies would be developed for each patient functional category. These programs, which will be distributed nationally on a regional basis, are:

—Intensive programs for severely head injured, postacute patients at each of the four DVA hospitals (Rancho Los Amigos cognitive levels III–VI).

—Hospital-based programs for fully oriented, higher functioning patients at each of the seven TBI centers (Rancho levels VII and VIII). One such example is our approved collaborative VA/DOD controlled study of the efficacy of intensive institutional versus a home rehabilitation program in service members with moderate head injury at WRAMC.

—Home or community-based transitional programs (to be developed in close collaboration with the NHIF at the seven TBI centers.)

—Home or institutional programs for long-term care survivors with severe, chronic, and relatively stable residual disability.

The current cost to the military and DVA for contracting such services in the private sector is estimated at about $1,000 per day. On the other hand, by utilizing existing facilities in the military and DVA systems we estimate our costs at about $250 per day for the more intensive severe TBI programs, and $100 per day for the hospital-based moderate TBI program; an immediate savings of over 400%. In the long run, however, the most important advantage of this plan is its "built-in" outcomes research feature, which provides care while also evaluating its effectiveness.

In addition to controlled clinical trials, a second research approach will be descriptive, and similar in some ways to the approach of the Vietnam Head Injury Study. Treatment and outcome data collected in the overall project, which may include large subsets of TBI patients, whether treated at local facilities or at the regional TBI centers, will be analyzed prospectively. We believe that much valuable information on current treatment patterns and patient outcome can be gleaned from analysis of this data, while at the same time ensuring and enhancing follow-up of all TBI patients. In particular, this approach will help identify promising treatment modalities for more detailed study in controlled clinical trials.

Progress to date

Concept approval and support for the DVHIP have been obtained from DOD(HA) and the Department of Veterans Affairs (DVA).

The Head Injury Unit, USUHS, has been designated to implement the program in close collaboration with the National Head Injury Foundation (NHIF). The DVHIP will be conducted by a Directorate, which consists of the principal investigators from each of the participating medical centers and the National Head Injury Foundation. In addition, a Policy Group has been constituted to oversee the program and provide direct liaison to the OVA, DOD(HA), the NHIF, and the military services. Members of the Policy Group and Directorate have been selected. (Appendix 2)

Seven TBI centers have been selected for participation, based on their facilities and staff, their demonstrated interest in TBI, and their location. They are:

Military facilities: Walter Reed Army Medical Center, Washington, DC; San Diego Naval Medical Center, San Diego, California; Wilford Hall US Air Force Medical Center, San Antonio, Texas.

Veterans facilities: Tampa Veterans Medical Center, Florida; Minneapolis Veterans Medical Center, Minnesota; Palo Alto Veterans Medical Center, California; Kansas City Veterans Medical Center, Missouri (Neurochemistry); Richmond Veterans Medical Center, Virginia.

The role of the National Head Injury Foundation (NHIF) has been defined and a grant has been awarded for fiscal year 1993. While maintaining an independent patient-advocate role, the NHIF will participate as a full member of the DVHIP operating Directorate and Policy Group. Additional roles of the NHIF include: a. Expansion of the NHIF Family Resource Network and Helpline to include DVHIP patients, and provide coordination and referral services specific to their needs. b. Development of comprehensive informational packages for DOD and DVA TBI survivors and their families. c. Provision of referral and linkage to NHIF state associations and affiliates, and community support groups. d. Development of community based support groups for DVHIP participants. e. Development of a training program on TBI, TBI rehabilitation, and community-based services for patients and care givers. f. Public education and public awareness of DVHIP goals and services. g. Participation in publication of scientific findings.

Registry and Tracking Program.—The TBI Registry is currently being piloted at the seven centers; registry forms on over 300 patients have been completed to date. As expected, most are young males involved in vehicular accidents or falls, and over half of them have suffered moderate or severe injuries resulting in significant disability. We expect to complete this pilot phase in the coming months, and expand the registry beyond the seven centers by the fall of 1993. DVHIP registry data will be compared with more general hospital discharge data available from statistical units of each of the services. Using this latter resource, we have found that US Army hospital admission rates for TBI have been almost halved between 1985 and 1991. While the reasons for this encouraging trend are still under study, one possible explanation is the marked decrease in drug and alcohol abuse as a result of preventive programs instituted by DOD over the past decade.

Evaluation Program.—A core evaluation battery has been developed, and data entry forms have been prepared. Protocols have been submitted and approved at the TBI centers. The TBI outcome evaluation battery has been pretested at WRAMC over the past year. After some modifications, training of personnel and piloting of the battery at additional centers began in January 1993. The core battery includes neurologic, psychiatric, cognitive, rehabilitation, and psychosocial evaluations, as well as magnetic resonance imaging (MRI) and advanced computerized electroencephalographic monitoring.

Model treatment programs

TBI model treatment programs are currently underway at WRAMC and Palo Alto VAMC. These will be expanded into multicenter therapeutic clinical outcomes research programs during fiscal year 1993. DOD(HA) and DVA support has been obtained for designation of all DVHIP centers as Specialized Treatment Services (STS) for TBI, thus facilitating patient referral procedures to them. Alternatively, after initial evaluation some patients may be referred as indicated for treatment to an alternate DVA hospital or to an appropriate contract facility in a case-managed program; with follow-up evaluation by DVHIP. It is envisioned that those services would generally be contracted by the DVA Vocational Rehabilitation Service "Independent Living" program or by CHAMPUS, in close collaboration with DVHIP case managers.

SPECIFIC OBJECTIVES FOR FISCAL YEAR 1993–95

Establish a multicenter, randomized trial of an institutional versus a home and community-based program of TBI rehabilitation for moderately head injured patients, using the ongoing pilot study at Walter Reed as a guide.

Establish a multicenter, randomized study of intensive interventional versus lower cost supportive institutional TBI rehabilitation programs for severely head injured patients.

Initiate multicenter therapeutic drug trials. usually in collaboration with the pharmaceutical industry, and at no significant extra cost to the DVHIP.

a. Begin an approved Phase I–II therapeutic trial of human recombinant superoxide dismutase (r-hSOD) to control brain swelling in acute, severely head injured patients.

b. Design and institute a therapeutic trial in acute moderate head injury. Candidate drugs include various free radical scavengers or certain activating drugs, such as methylphenidate or bromocriptine.

c. Aggressive and Violent Behavior. Design and institute a study to compare various alternatives for the control of aggression in severely head injured patients. Candidate therapies include behavior modification as well as various drugs such as tranquilizers, carbamazepine, or propranolol.

APPENDIX 1

Patient Evaluation Program (regional military or DVA TBI hospital)

In order to maintain objectivity, the patient evaluation program will be conducted relatively independently from TBI treatment programs. Personnel evaluating outcome on a given individual will thus generally not have been providing the rehabilitation care to that patient.

A. Evaluation Schedule: Baseline, six, 12, 24 months, and five years postinjury.
B. Patient Evaluations: Outcome Variables (see attached sample Data Entry Forms).

1. Neurologic/CT-MRI; 2. Biochemical parameters of traumatic brain injury; 3. Neuropsychologic/psychiatric. a. Cognitive/speech and language. b. Behavioral. 4. Rehabilitation Medicine. a. Occupational therapy/return to work. b. Physical rehabilitation. 5. Community/social adjustment.

Treatment program evaluation variables/basic elements of TBI rehabilitation program

The following treatment information will be collected from both patient and reliable informants at the time of each follow-up evaluation.

A. Basic Treatment Elements (Content of Therapies) used for a given patient. 1. Case manager approach. 2. Multidisciplinary care conferences. 3. Neuropsychologic/behavioral. 4. Neurologic/psychiatric/pharmacological treatment. 5. Speech and language therapies. 6. Occupational/vocational therapies. 7. Physical therapies. 8. Rehabilitation nurse/counseling. 9. Family/community support systems.

B. Treatment Intensity for a Given Patient. 1. Total hospital days/total rehabilitation days. 2. Hours of individual therapies per week. 3. Hours of group therapies per week. 4. Hours of outpatient therapies per month. 5. Hours of community based therapy per month.

C. Estimated Cost of Treatment for a Given Patient.

Algorithms for estimation of cost of treatment, including comparison with private TBI programs, will be developed in collaboration with DVA and DOD.

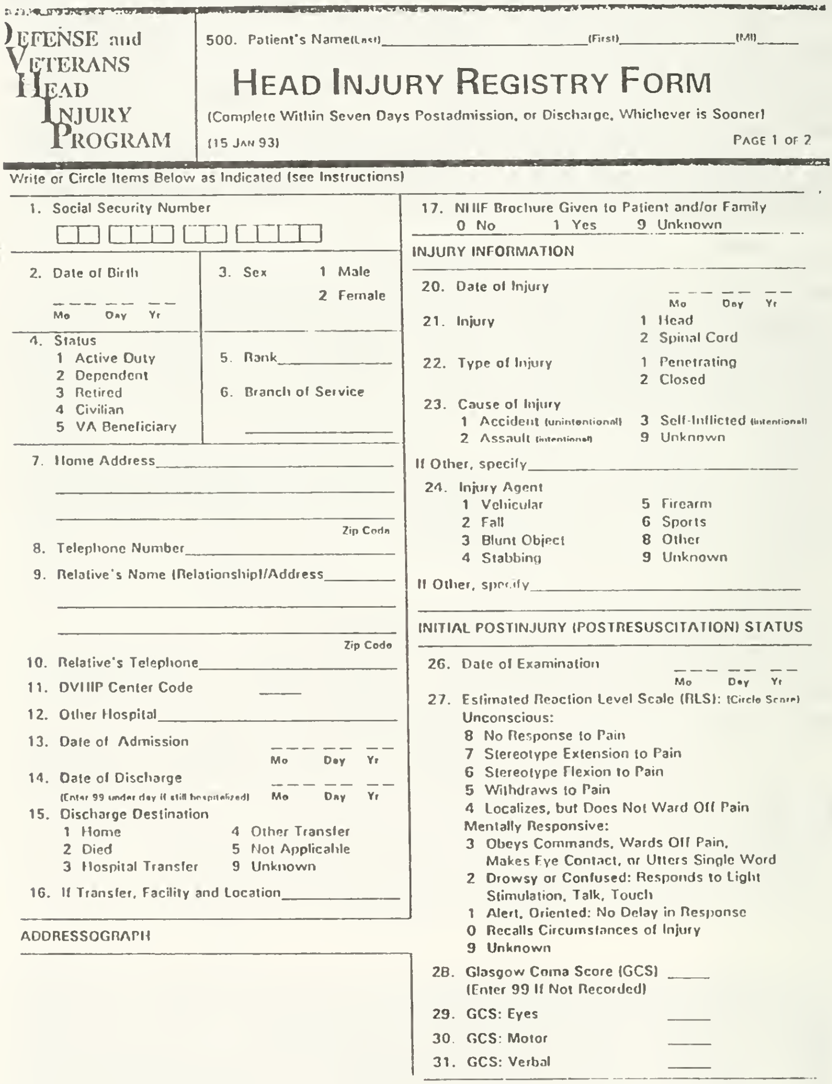
APPENDIX 2

Policy group

RADM Edward Martin (PHS), Acting ASD(HA) for Professional Affairs, COL Michael J. Kussman, MC, DOD (Health Affairs); COL Andres M. Salazar, MC. USA, Uniformed Services University of the Health Sciences; Dennis B. Smith, M.D., Associate Medical Director for Research, Department of Veterans Affairs; George Zitnay, Ph.D., President and CEO, National Head Injury Foundation; CAPT Morris W. Pulliam, MC, USN, National Naval Medical Center; Col Michael Greenberg, MC, USAF, Andrews Air Force Base, MD 20331; LTC William Daniels, MSC, Uniformed Services University of the Health Sciences.

Working directorate

COL Andres M. Salazar, MC, USA, Uniformed Services University of the Health Sciences; Lt Col David S. Dougherty, MC, USAF, Uniformed Services University of the Health Sciences; George Zitnay, Ph.D., Mary Reitter, National Head Injury Foundation; LCDR R. James Bloom, MC, Balboa Naval Medical Center, San Diego, California; Lt Col. Stephen A. McGuire, MC, Wilford Hall Air Force Medical Center, San Antonio, Texas; Maria Paz Alfonso, M.D., Tampa VAMC, Florida; Barbara J. Sigford, M.D., Minneapolis VAMC, Minnesota; Elaine S. Date, M.D., Palo Alto VAMC, California; Charles R. Lamb, Jr., M.D., Richmond VAMC, Virginia; Barry W. Festoff, M.D., Kansas City VAMC, Missouri; Karen Schwab, Uniformed Services University of the Health Sciences; Jordan H. Grafman, Ph.D., National Institutes of Health; Deborah Warden, M.D., Uniformed Services University of the Health Sciences.



DEFENSE and
VETERANS
HEAD
INJURY
PROGRAM

500. Patient's Name(Last)________________(First)__________(MI)_____

HEAD INJURY REGISTRY FORM

(Complete Within Seven Days Postadmission, or Discharge, Whichever is Sooner)

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Write or Circle Items Below as Indicated (see Instructions)

1. Social Security Number
☐☐ ☐☐☐ ☐☐ ☐☐☐☐

2. Date of Birth ___ __ __ Mo Day Yr

3. Sex
1 Male
2 Female

4. Status
1 Active Duty
2 Dependent
3 Retired
4 Civilian
5 VA Beneficiary

5. Rank__________

6. Branch of Service __________

7. Home Address__________
____
__________ Zip Code

8. Telephone Number__________

9. Relative's Name (Relationship)/Address__________
____
__________ Zip Code

10. Relative's Telephone__________

11. DVHIP Center Code _____

12. Other Hospital__________

13. Date of Admission ___ __ __ Mo Day Yr

14. Date of Discharge ___ __ __ Mo Day Yr
(Enter 99 under day if still hospitalized)

15. Discharge Destination
1 Home
2 Died
3 Hospital Transfer
4 Other Transfer
5 Not Applicable
9 Unknown

16. If Transfer, Facility and Location__________

ADDRESSOGRAPH

17. NHIF Brochure Given to Patient and/or Family
0 No 1 Yes 9 Unknown

INJURY INFORMATION

20. Date of Injury ___ __ __ Mo Day Yr

21. Injury
1 Head
2 Spinal Cord

22. Type of Injury
1 Penetrating
2 Closed

23. Cause of Injury
1 Accident (unintentional)
2 Assault (intentional)
3 Self-Inflicted (intentional)
9 Unknown

If Other, specify__________

24. Injury Agent
1 Vehicular
2 Fall
3 Blunt Object
4 Stabbing
5 Firearm
6 Sports
8 Other
9 Unknown

If Other, specify__________

INITIAL POSTINJURY (POSTRESUSCITATION) STATUS

26. Date of Examination ___ __ __ Mo Day Yr

27. Estimated Reaction Level Scale (RLS): (Circle Score)
Unconscious:
8 No Response to Pain
7 Stereotype Extension to Pain
6 Stereotype Flexion to Pain
5 Withdraws to Pain
4 Localizes, but Does Not Ward Off Pain
Mentally Responsive:
3 Obeys Commands, Wards Off Pain, Makes Eye Contact, or Utters Single Word
2 Drowsy or Confused: Responds to Light Stimulation, Talk, Touch
1 Alert, Oriented: No Delay in Response
0 Recalls Circumstances of Injury
9 Unknown

28. Glasgow Coma Score (GCS) _____
(Enter 99 If Not Recorded)

29. GCS: Eyes _____

30. GCS: Motor _____

31. GCS: Verbal _____

DEFENSE and VETERANS HEAD INJURY PROGRAM

HEAD INJURY REGISTRY FORM

(15 JAN 93)

PAGE 2 OF 2

33. Alcohol or Drug Related
0 No
1 Yes
2 Suspected
9 Unknown

34. Associated Injuries
0 No 1 Yes 9 Unknown

35. If Yes, Describe________________

ACUTE CARE/HOSPITAL COURSE SUMMARY

38. Intracranial Surgery 0 No
1 Yes

39. If Yes, Describe________________

____

40. Intracranial Mass Lesion
0 None
1 Frontal
2 Temporal
3 Parietal
4 Occipital
5 Other
9 Unknown

If Other, specify________________

41. CNS Complications
0 None
1 Postop Hematoma
2 Abscess
3 Meningitis
4 CSF Leak
5 Wound Infection
6 Other
9 Unknown

If Other, specify________________

42. Systemic Complications
0 None
1 Hemorrhage
2 Sepsis
3 Shock
4 Pulmonary
5 Coagulopathy
6 Other
9 Unknown

If Other, specify________________

Total Duration of Unconsciousness Postinjury
(Enter 99 if still in Coma)

43. Days _____ 44. Hours ___ : ___

45. Posttraumatic Amnesia (Enter 99 if still in PTA)

46. Days _____ 47. Hours ___ : ___

48. History of Seizures Posttrauma
0 None 1 Partial 2 Generalized 9 Unknown

RANCHO LOS AMIGOS COGNITIVE FUNCTION LEVEL

1 No response
2 Generalized response
3 Localized response
4 Confused (agitated)
5 Confused (inappropriate)
6 Confused (appropriate)
7 Oriented Automatic
8 Normal
9 Unknown

50. Seven Days Postinjury _____

51. Present _____

GLASGOW OUTCOME SCORE

1 Dead
2 Vegetative
3 Severe
4 Moderate
5 Good Outcome
9 Unknown

52 Seven Days Postinjury _____

53 Present _____

MOBILITY

1 Bedridden
2 Wheelchair (Dependent)
3 Wheelchair (Transfers)
4 Assisted Walking
5 Walks Alone
9 Unknown

54 Seven Days Postinjury _____

55. Present _____

ICD-9 DIAGNOSES

0 No 1 Yes 9 Unknown

58. 800: Skull Fracture, Vault	0	1	9
59. 801: Skull Fracture, Base	0	1	9
60. 802: Fracture of Face Bones	0	1	9
61. 803: Skull Fracture, Other	0	1	9
63. 850: Concussion	0	1	9
64. 851: Brain Laceration or Contusion	0	1	9
65. 852: Extracerebral Hemorrhage/Hematoma	0	1	9
66. 853: Intracerebral Hemorrhage/Hematoma	0	1	9
67. 854: Other, Unspecified Intracranial Injury	0	1	9
68 905: Late Effect of Skull Fracture	0	1	9
69. 907: Late Effect of CNS Injury	0	1	9

70. Died 0 No
1 Yes

71. Date of Death __ __ __ Mo Day Yr

72. Primary Cause of Death________________

ADDITIONAL REMARKS (Summary of Most Significant Findings, Description of Event)

73. Date Form Completed __ __ __ Mo Day Yr

Signature________________

Printed Name

Return to: Andres M. Salazar, M.D., COL, MC
Director, Defense/Veterans Head Injury Program
Department of Neurology, USUHS
4301 Jones Bridge Road
Bethesda, MD 20814-4799

STATEMENT OF THE NATIONAL MILITARY FAMILY ASSOCIATION INCORPORATED ON QUALITY OF LIFE

The National Military Family Association (NMFA) is a non-profit, primarily volunteer organization composed of members from the seven uniformed services, active duty, retired, reserve component, and their family members and survivors. NMFA is the only national organization whose sole focus is the military family and whose goal is to influence the development and implementation of policies which will improve the lives of those family members. Mr. Chairman, NMFA appreciates this subcommittee's strong and continuing support of military families.

The drawdown and restructuring will come to an end in the next few years, and base closures and realignments will be completed. NMFA is fully aware of the budget deficit and realizes the need to balance quality of life and compensation issues accordingly. However, we believe now is the time to plan and prepare for the future. Attention is focused on compensation issues, children's education and health care.

COMPENSATION

Pay freeze and retiree COLA cuts

The proposed freeze in military pay in FY 94 and reduced pay raises in FYs 95, 96 and 97 will exacerbate the current 11.7% pay gap. A 20% cumulative deficit will result. The use of food stamps by military families in commissaries more than doubled from 1989 to 1992. This constant decrease in buying power is affecting and will continue to affect not only the morale of service members and their families but also future recruiting and retention.

Half COLAs for federal retirees under age 62 could reduce the buying power of military retired pay by almost 50% by the time a retiree reaches age 61. This COLA cut will affect military retirees disproportionately. Federal civilians who face mandatory retirement before age 62 such as air traffic controllers, firefighters and federal law enforcement officers are not affected by this pay cut. Virtually all service members face mandatory retirement before age 62. 67% of enlisted retirees and 38% of officer retirees are under age 62. The combination of the pay freeze, reduced future pay raises and cuts in retiree COLAs sends an unmistakable message to current and future military families. The "shared pain" suggested as justification for these actions will become unbearable.

CONUS COLA

Since 1989, NMFA has requested a CONUS Cost of Living Adjustment (COLA) for service members living at high cost duty stations. The Seventh Quadrennial Review of Military Compensation Report also suggests a CONUS COLA. Studies quoted in the report verify what NMFA has been hearing from military families. Differences in quality of life from one duty station to another have widened considerably in recent years.

The Report cites a Runzheimer sample of seventeen U.S. cities which shows a 20% increase in the cost of living between a high cost area and a low cost area between 1980 and 1990. The Report also shows even promotions and longevity pay increases do not compensate for the 15% to 19% increase in cost of living caused by moving from a median cost area to a high cost area. The Report does not consider costs of housing which are, in part, covered by the Variable Housing Allowance. It does take into consideration the reduced price of goods available to military families at Commissaries and Exchanges.

The Report also mentions the difficulty in filling active duty positions in high cost areas as well as reduced reenlistment rates in these locations. In addition, NMFA is concerned about military families who must live in substandard housing and unsafe neighborhoods; military families who must depend on food stamps (over $24 million were redeemed at Commissaries alone in 1992), and military families who cannot afford basic health care for their children. The Federal Pay Reform Act of 1993 included a locality pay increase for federal civilians by cutting .5% not only from their pay raises, but those of military members as well. Uniformed personnel, whose quality of life suffers when they and their families are transferred to high cost areas, should not be expected to give up part of their pay to provide increased compensation for some federal civilians.

Relocation

Relocation expenses can devastate the budgets of military families. The FY 93 Defense Authorization Act temporarily extended the Temporary Lodging Expense allowance (TLE) from 4 to 10 days in certain areas. Reports from NMFA Representatives around the country indicate this authorization is definitely providing assistance to military families in those locations where it is most needed. The positive effect this extended allowance has had on military families as they relocate should be reviewed and a permanent and unrestricted extension to 10 days authorized and funded.

The administration's budget eliminates income tax deductions for real estate related costs as well as the costs of meals when transferring to new duty stations. With the exception of an additional two months of Basic Allowance for Quarters, the Government (the military employer) does not pay for any real estate or rental expenses incurred by service members when they relocate. The government does pay many of these expenses for its civilian employees as do most private sector employers. This proposal would also disproportionately affect the military community.

Homeowner's Assistance Program

Military families may lose hundreds and thousands of dollars if caught with a house at a BRAC site. The Homeowner's Assistance Program (HAP) usually only covers a loss if service members are currently living in these houses, and even then coverage is only partial and is fully taxable as ordinary income. Current law allows servicemembers who are stationed overseas to qualify for HAP if they owned and occupied the house within the last three years. However, servicemembers transferred within CONUS, who were unable to sell their houses when they relocated cannot qualify for the Program. Those whose 100 percent VA loans are assumed by the government under the HAP will incur a tax liability on income they never receive.

Housing allowances

Congress restructured housing allowance rates in 1985 so servicemembers would pay no more than 15% of their housing costs out of their own pockets. The Basic Allowance for Quarters (BAQ) was to cover 65% of the national median housing cost per pay grade and the Variable Housing Allowance (VHA) the additional 20%. NMFA has been informed that funding for VHA last year allowed the VHA program to meet its target. However, shortfalls in the BAQ require most members to pay 20% of their housing costs, not the mandated 15%. The proposed FY 94 pay freeze and future pay raise reductions also apply to allowances. Therefore, out of pocket housing costs of servicemembers and their families will quickly escalate. When families cannot afford suitable housing they are forced to separate. The servicemember becomes a geographic bachelor and the family remains behind at the old duty station. Family separations are the primary reason sailors give for declining to reenlist.

IMPACT AID

Transfer to DOD

NMFA does not support funding Impact Aid with Defense dollars nor do we support transferring the administration of the program to DOD. The Department of Education (DoEd) has done a superb job of administering the program. The fault lies not in the administration of the program, but in its inadequate funding. If Impact Aid for military children were to be funded from within the DOD budget, NMFA can foresee this program competing with military education and training for dollars. Since Impact Aid funding for children of Indians, Civil Servants and occupants of low rent housing would remain within the DoEd budget, it is probable that schools educating different federally connected children would receive different amounts of Impact Aid for each child. Besides creating a bureaucratic nightmare for school districts, this proposal would pit some federally connected children against other federally connected children.

Drawdown base closure and realignment

The tremendous adverse effect the massive drawdown of forces from Germany had on many local school districts in 1991 and 1992 has so far not been repeated. However, as more installations actually enter the closure and realignment phase, the possibility certainly exists that such situations could occur again. As with the return of forces from Germany, the overwhelming number of incoming military children will only qualify for Impact Aid "b" payments. Government housing at most gaining installations is at 100% occupancy. Incoming families must find housing in the civilian community. An Impact Aid "b" student is one whose military sponsor works on a federal installation, but lives in the civilian community. The administration's budget calls for eliminating 50 percent of the funding for Impact Aid "b" students in FY 94 and totally eliminating the program within three years. If new students arrive by the hundreds and force school districts to acquire 15 to 20 or more portable classrooms, increase the number of students per class by 5 to 10%, and find and hire additional staff, some form of immediate compensation must be available to them.

NMFA and various Congressional Offices were told the regulations for the Sec. 386 Impact Aid supplemental funding, appropriated in Public Law 102–396 (FY93 Defense Appropriation Act), would be in the Federal Register by mid-May. The regulations have not yet appeared in the Federal Register. The proposed language for the regulation includes both "a" and "b" students, however a school district must be 30% impacted using the most current data. The most current data is for the 1992–1993 school year. Some schools which were severely impacted by the withdrawal of forces from Germany in the 1991–1992 school year may not qualify for any of the supplemental funding or, if they do, will qualify at a lesser level. NMFA believes the immediate relief needed by the affected school districts should take precedence over any modification of the regulatory language. However, we hope regulations for any future supplemental funding targeted to schools specifically impacted by DOD actions will not be so delayed that affected schools can no longer qualify.

DoEd funding

Underfunding of the regular Impact Aid program in DoEd's budget is causing a reduction in the quality of education provided to military children. NMFA is concerned that other school districts may be forced to follow the lead of North Chicago, IL. After abolishing athletic and extracurricular programs the district was forced to also cut basic education programs. Finally, this spring the-school district announced that schools will not open in the fall of 1993. Forty per cent of North Chicago students are military Impact Aid students. While the funding of regular Impact Aid is not under this Subcommittee's jurisdiction, we believe the emphasis military families place on the education of their children and the funding problems with the program should be brought to your attention.

DOD supplemental funding

NMFA also believes a special emergency supplemental for Impact Aid should be funded within the DOD budget. The supplemental should only be used for schools facing emergency situations or those schools specifically impacted by DOD actions such as base realignments or closures.

HEALTH CARE

Current DOD health care initiatives

NMFA continues to support the CHAMPUS Reform Initiative (CRI) as the most successful managed care initiative DOD is currently operating. Beneficiary satisfaction remains extremely high, particularly with the PRIME (HMO) option. NMFA supports some modification of the PRIME option to include capitation, tightening of the Gatekeeper function, and redesign of the beneficiary payment structure. We are opposed to any modification of the Standard CHAMPUS benefit in CRI states. NMFA does not support DOD's proposed BRAC payment structure as a model for any of its managed care programs.

The proposed BRAC payment structure will discourage enrollment in an HMO option whether in CRI or TRICARE or other so-called managed care programs. The co-payment in any well designed and efficiently managed HMO should cause beneficiaries to think twice about seeking medical attention, but should not act as a barrier. Delay of necessary medical attention at the primary level can and does lead to medical treatment at a more expensive level of care. Furthermore, since beneficiaries enrolled in an HMO have no control over whether they are hospitalized or how long a hospital stay is, they should not be charged anything for inpatient care. An HMO places incentives for hospitalization or length of stay where it properly belongs, with the physician.

The proposed BRAC payment structure calls for co-payments in the HMO option ranging from $5 to $15 per visit and $9.30 to $125 per inpatient day. Retirees must pay 20% of separately billed professional charges for inpatient care. The typical co-payment for a visit in any other HMO open to federal employees is $0 to $5. NMFA knows of none which have co-payments of $10 or $15. Nor does it know of any HMO which charges beneficiaries for inpatient care. It appears to NMFA that DOD is trying to eliminate the HMO option in its managed care programs. It has eliminated the HMO option in its Northern Region procurement and the proposed BRAC payment structure will discourage people from enrolling in an HMO which has a $15 (retiree) co-payment. In many areas of the country, that $15 co-payment will be higher than any co-payment for a primary care visit under a PPO arrangement or even standard CHAMPUS.

CHAMPUS and the disabled

The Coordination of Benefits type of payment through CHAMPUS available to non-disabled military beneficiaries under the age of 65 should be authorized permanently for qualified disabled beneficiaries. End stage renal disease (ESRD) patients, certain former spouses and survivors should also be included in this payment structure.

Future health care program

NMFA has developed a Proposal for a Health Benefits Program for Military Beneficiaries. The Proposal has three components. They are as follows:

—All eligible military beneficiaries, regardless of age or status would have the option of enrolling in any non-restricted Plan in the Federal Employee Health Benefits Program (FEHBP).

—A Military Health Plan centered around Military Treatment Facilities (MTFs) would be created and incorporated under the FEHBP.

—A Health Care Allowance would be established for Active Duty Personnel for their family members.

NMFA believes the health care of active duty personnel is a readiness issue. The decision to apply the program to Active Duty Members must be made by DOD and the Services, therefore they are not included in this Proposal.

FEHBP.—All eligible beneficiaries (other than Active Duty Personnel) would have the option of choosing any non-restricted FEHBP Plan under the same terms as civilian employees. They would pay premiums at the same rate. Active Duty Families would be eligible to enroll in the categories of Single or Family (very much like the Active Duty Dependents Dental Plan) while retirees and their families would be eligible for the categories of Self or Self and Family. At the present time, military personnel are the only federal employees/retirees who are not eligible for the FEHBP.

Military health plan.—The Military Health Plan (MHP) would come under the umbrella of the FEHBP. The premiums would be based on the standard formula used by the FEHBP. The government share would be 60% to 75% and the employee/retiree share would correspond accordingly (see Health Care Allowance below). Enrollment in the MHP would be restricted to military beneficiaries. The Plan would be administered regionally by DOD contractors and include networks of civilian providers and hospitals as well as military facilities and providers. DOD/DVA resource sharing could also be part of the MHP. Military Facilities would continue to be managed by military commanders. Enrollment in the Military Health Plan would assure access to health care. The current Space-available/priority system would no longer apply to those who choose to enroll. The Plan would be a Health Maintenance Organization (HMO). As in other HMOs in the FEHBP, no deductibles would be required and co-payments would be non-existent or minimal.

Health care allowance.—The Services would establish a Health Care Allowance for Active Duty Personnel for their family members. It would be based on the employee contribution to the Military Health Plan and adjusted yearly. If the total premium for the MHP is $250 per family per month, the government share would be $150 and the employee/retiree share would be $100. A single/self premium would be $150; the Government share would be $90 and the employee share would be $60.

The services would give Active Duty Personnel (employees) a Health Care Allowance of $70 per month for their families. A single dependent allowance would be $35. If they enroll their families in the Military Health Plan, they would forfeit the Allowance. If they enrolled their families in another FEHBP plan, they would apply the Health Care Allowance toward the premium. The Health Care Allowance could not be applied to something other than a health care premium.

Under this sample payment structure, both employees (Active Duty Personnel) and retirees would pay a premium of $100 a month for the Military Health Plan, but the employee would have an out of pocket expense of $30 per family, or $25 for a single dependent while the retiree would have an out of pocket expense of $100 per family or $60 for self.

CHAMPUS and space-available access to MTFs would be available to those who choose not to enroll in a health care plan but only for a certain period of time. We suggest a window of three to five years. This should be enough time to set up the Military Health Plan and to complete the process of educating military beneficiaries on the changes in their health benefit. It should be made clear to all beneficiaries in the beginning that even though they may continue to attempt to access military facilities on a space-available basis, little or no space will actually be available. At the end of the window period, both space-A and CHAMPUS would be eliminated.

The direct care component of the Military Health Services System must remain viable. The number one concern of families is the safety of their military member. Full medical support must be part of each deployment. While large numbers of military families remain overseas, American military health care must remain available. Retention of military medical facilities is essential at many remote bases and posts in the United States where civilian sector medical resources are insufficient.

Budget trimming and the drawdown of forces will obviously affect the military medical system. The combination of contractor support and the option military beneficiaries will have to enroll in any FEHBP plan should significantly ease the pressure on the direct care system. The military medical establishment will no longer be fully responsible for providing health care for all eligible beneficiaries. This will give the establishment more flexibility in supporting deployments and in readiness training. The Surgeon Generals should be able to utilize uniformed professionals more efficiently and improve graduate medical education. The contractor (plan administrator) would be responsible for insuring all enrollees have access to health care, leaving the military free to staff according to their requirements and not those of the beneficiaries.

Giving beneficiaries the opportunity to select their own health plans annually through the Open Season process will give DOD the incentive to make the Military Health Plan competitive. MTFs will be forced to become more efficient and more responsive to the community if they wish to stay in business.

DOD should make the advantages of this change in benefit clear to military beneficiaries through an extensive education program Beneficiaries will not be paying for treatment in a military facility per se, they will be buying an insurance plan. They will no longer be subject to rationed health care through a space-available/priority system and their entitlement (CHAMPUS) will no longer end at age 65 when they become Medicare eligible. They will be able to choose annually a health plan which suits their medical needs. Lower income active duty families will be able to enhance their buying power with the Health Care Allowance thereby becoming aware consumers of health care rather than government dependent.

The Government should be able to achieve cost containment through enrollment of beneficiaries, the shift to managed care and competition. Recruiting and retention should be enhanced by offering service members a guaranteed health care benefit for their families and throughout retirement.

Problems exist in the military health care benefit which can easily be addressed by inclusion of military beneficiaries in the FEHBP. DOD is only able to offer an extremely expensive and limited COBRA plan to service members leaving the military before retirement. The FEHBP offers a wide range of plans which are easily adapted to COBRA. Medicare is unavailable overseas. Military retirees who live overseas lose their health care coverage when CHAMPUS ends at age 65, and military facilities are unavailable. The FEHBP is available to all other federal retirees who live overseas. It should be made available to military retirees as well.

DOD has the obligation to offer its military employees/retirees the same opportunities for health care coverage it offers its civilian employees/retirees. The FEHBP is a successful and competitive program open to every federal employee/retiree except the military. NMFA believes it is the logical health benefits program for the military community.

CONCLUSION

NMFA understands that not all these issues can be addressed in FY 94 and some perhaps not for several years. We think it is important for the Subcommittee to realize the pressure military families are under. They are faced with having to choose between a voluntary separation bonus or taking their chances with involuntary cuts. They are faced with the stress of waiting for the results of selective early retirement boards. They are faced with duty tours of constantly changing duration because of the decommissioning or deactivation of units, realignments or base closure. As debate continues on the use of U.S. forces in various trouble spots around the world, military families are on edge.

All Americans are asked to share the burden as the United States deals with its deficit and adjusts to the end of the Cold War. Military families are more than willing to share this burden. However, military families have reached the point where they honestly believe they are being asked to give more than their fair share.

Statement of the Naval Reserve Association

Mr. Chairman, distinguished members of the Committee, it is a privilege to present the views of the Naval Reserve Association to the Committee for your consideration. We want to thank the committee for its past support of all the deserve components, and in particular for your restoration in recent years of the severe and arbitrary cuts in the Naval Reserve proposed in the President's annual Defense Budget Submissions.

Overview

Once again the Naval Reserve Association is before this Committee seeking help for a Naval Reserve that is being subjected by the current Defense Budget and other factors to unwarranted Fiscal Year '94 cuts of unreasonable proportion. Once again, the Naval Reserve is being substantially cut proportionately more than any of the active or other reserve components, and there appears to have been no serious effort by DOD or the Navy to assign a greater portion of the Navy Total Force to its cost effective reserve component. The proposed cut in Naval Reserve strength for FY '94 is 20,275, or 15 from the FY '93 Naval Reserve end-strength of 133,675 down to 113,400 in FY '94. It would appear that the Navy, among all the military services, is the most hesitant to accept their reserve component as a full partner in the Total Force.

Base closures and Rand study

Two other factors endanger the continuance of the Naval Reserve as a viable force in Fiscal Year 1994 and the years beyond. The Naval Reserve is subject to massive BRAC base closures this year, consisting of 38 Naval Reserve installations and 18 closing Navy bases hosting Naval Reserve facilities, which in itself is an effective method of cutting the Naval Reserve. Only 4 of 38 proposed Naval Reserve base closures meet minimum BRAC/closure criteria. The other factor is the flawed and apparently biased Center for Naval Analyses conducted Navy portion of the RAND Force Mix Alternatives Study, which gives short shrift to the Naval Reserve and advocates a predominately active Naval force. Both of these debilitative actions will be discussed further in this statement.

Base closures

In their January 1993 annual report, the Reserve Forces Policy Board addresses base closures, ". . . base closures are also a major concern due to loss of training sites, support services and proximity to Active component support. Impacts on Reserve components must be a criterion for base closure decisions. The board continues to urge that consideration be given to the impact of base closures on the reserve components before such a decision is made." Demographics of reservists and the impact of base closures on the Reserve were not among the criteria for evaluating BRAC closure nominations this year.

Cost effectiveness

The Reserve Forces Policy Board further recommends in their report, ". . . that careful analysis be conducted before approving Reserve Component force reductions, to ensure full consideration of Reserve component cost effectiveness and force capability. If budget constraints cause the service to make force structure reductions in the Active Forces, a thorough analysis should be conducted on the feasibility and cost effectiveness of transferring that capability to the Reserve components." CNA failed to objectively conduct an in-depth and unbiased analysis utilizing the above basic premise in their portion of the RAND report.

Force structure cuts

The announced Naval Reserve cuts include elimination of major force structure programs including 4 of the 13 Naval Reserve P–3 maritime patrol squadrons. These VP squadrons, manned by 365 reservists each, routinely augment the active fleet surveillance forces around the world throughout the year, and constitute the major Naval Reserve maritime surveillance assets involved in drug interdiction. One helicopter LAMPS MK1 ASW squadron, HSL–74 located at NAS South Weymouth, MA, which is an essential element of the Sea-Air frigate anti-submarine force, is also being eliminated, as is the COOP shallow water mine detection program, 1 Fleet Hospital (field hospital), FFT–1052 frigate ASW program, and a substantial number (874) of full time support (TAR) personnel.

Eliminated aviation augmentation units

Solely for fiscal reasons, the entire aviation squadron augmentation program of some 2,000 trained ready veteran Naval Air Reservists were eliminated in FY '92. Only a small portion of these FY '92 eliminated reserve aviation units were assigned to support decommissioning active squadrons and those could have been, and should be, profitably assigned to other active fleet and training squadrons. Similar to the highly acclaimed Air Force Associate Units, these squadron augment units were very effective force multipliers both for mobilization and for peacetime fleet contributory support. This program needs to be reinstated.

Additional budget cuts

Yet to be definitively identified are the almost 12,404 additional Naval Reservists and their units that will also be eliminated in FY '94. Only 957 of the SelRes cut is attributable to active Navy and other NRF ship decommissionings. With all the easily explainable cuts having been announced, the 12,404 loss will most certainly cut into the muscle of the Naval Reserve capability such as medical personnel, Naval Control of Shipping, Harbor Defense/MIUW units, construction battalions, and cargo handling battalions. These programs constituted a substantial portion of the Naval Reserve programs deemed essential in the Gulf War and who were recalled in operation Desert Shield/Desert Storm.

Greater reliance on reserves

Since superpower tensions have eased, the Cold War is over, and the perceived warning time has increased, now should be the time to seriously consider greater involvement of the reserve components to achieve the most cost effective Total Force in this era of shrinking Defense budgets. In our view the Total Force debate should focus upon national security interests and how our nation can best provide affordable defense forces, rather than the continuing effort to disproportionably cut the Naval Reserve in an apparent effort to retain a larger active Naval force.

FY '94 strength recommendation

The Naval Reserve Association strongly recommends that the Naval Reserve be retained in Fiscal Year 1994 at the levels authorized by Congress for FY '93 in last year's Defense Authorization Act. This would sustain a Navy Selected Reserve strength in FY '94 of 133,675 which in fact is a cut of almost 20,000 or 13% from the FY '91 Naval Reserve Strength but considerably more realistic than the Administration's planned FY '94 massive cut to 113,400 Navy Selected Reservists.

FORCE STRUCTURE CUTS

The FY '94 Defense Budget repeats the FY '93 proposed elimination of: Four (4) P–3 maritime patrol squadrons; one (1) LAMPS MK1 SH–2 helicopter ASW squadron; COOP shallow water minecountermeasure/harbor survey program. And initiates cuts in FY '94 of: The "Innovative Naval Reserve: FFT–1052 ASW frigate program (8–FFT–1052 frigates plus 32 inactive FF–1052s); numerous additional ship, base and staff augment units and support programs.

The Naval Reserve Association is concerned that the loss of these units, programs, and their trained ready personnel could constitute an irreversible loss of Naval Reserve capability and personnel.

Recommendation

It is strongly recommended that the Naval Reserve force levels of FY '93 be retained in Fiscal Year 1994.

It is specifically recommended that the current thirteen (13) P–3 squadron MPA force, and the current three (3) HSL SH–2 helicopter ASW force be maintained in Fiscal Year 1994.

It is also recommended that the current Navy surface Reserve force structure be maintained with FFG–7 frigates replacing the FFT–1052 frigates should those ships be retired

And that the COOP program be retained, or in the alternative, be considered for reconfiguration into a more broadly based shallow water harbor defense program including a mine locating capability.

NAVAL RESERVE MANPOWER (SELECTED RESERVE END STRENGTH)

The FY '94 Defense Budget submission proposes to further cut the FY '94 Naval Reserve end-strength to 113,400 from 133,675, a reduction of 20,275 (15%) from the FY '93 level of 133,675, and a total cut of approximately 40,000 (27%) below FY '91 levels. Included in the Selected Reserve end-strength are the Full Time support (TAR) personnel who are being cut 2,342 from 21,701 down to 19,359 in FY '94.

Now that the Cold War is over and the perceived warning time substantially increased, the opportunity exists to follow Congressional direction and consider greater involvement of the Naval Reserve in the Total Force rather than make arbitrary massive cuts based on proportional down-sizing or share-the-pain rationales. The Naval Reserve Association supports the retention in FY '94 of the 133,675 Navy Selected Reserve end-strength authorized for Fiscal Year 1993 in last year's Defense Authorization Act. Any temporary surplus SelRes personnel, resulting from the decommissioning of active ships and units that they augment and support, should be assigned and gainfully employed in other cost effective and vital missions in the new order such as: reinstatement of aviation squadron augmentation units, major Navy and joint staff support units and civil affairs/psychological operations units.

Recommendation

That the Reserve Pay Navy (RPN) account be increased $55M over the FY'94 DOD budget request to fund a FY'94 Navy Selected Reserve end strength of 133,675. It is assumed the DOD budget request includes one-half year funding for FY'94.

BASE CLOSURES

Base closures are of critical concern to all the reserve components and to the Naval Reserve in particular. Demographics are the lifeblood of the Naval Reserve, i.e. a wide geographic dispersal of training bases throughout our nation is a prerequisite to access the trained veteran manpower necessary to man the sophisticated ship systems and aircraft of today's Navy and Naval Reserve. Reservists are anchored by domicile and livelihood to a particular area and upon base closures do not transfer with the transfer of their squadron or units to a distant alternate site. Upon closure of their reserve training sites most cannot, or choose not to, move or commute long distances to continue participation as Naval Reservists. The proposed closure of thirty eight (38) Naval Reserve facilities and an additional eighteen (18) Naval Bases hosting Naval Reserve activities if concluded, could result in a 30%–40% cut in the Naval Reserve. The closure of all the Naval Air Reserve bases in the Midwest and New England will deprive most of the Naval Air Reservists in one-third of our nation the opportunity to participate in the Naval Reserve and will seriously restrict the manning, force structure, and readiness of the Naval Air Reserve Force.

Recommendation

That the Base Closure and Realignment Commission hold hearings on the reserve demographic aspects of Base closings, or exclude Naval Reserve bases and installations from consideration in the 1993 BRAC proceedings.

That Congress be requested to direct that reserve demographics be a Base closure criteria in the 1995 base closure proceedings.

That prior to closing Naval Reserve bases and Naval bases hosting Naval Reserve activities, a careful analysis of the demographic impact of the proposed closing upon Naval Reserve manning and readiness be conducted.

ANALYSIS OF ALTERNATIVE FORCE MIX STRUCTURES (THE RAND REPORT)

As previously noted and as described in great detail in a recent Reserve Officers Association white paper, the Center for Naval Analyses' Navy portion of the RAND force mix study report, that was submitted to DOD and Congress, appears to be lacking in-depth unbiased analysis and justification, and thus is considered fatally flawed.

The preferred Navy alternative constructed by CNA is entitled "Aspin alternative 'C' with a minimum reserve." CNA identified the Naval Reserve forces and individuals activated for Operation Desert Shield and Operation Desert Storm (ODS) and hypothesized that ODS (a uniquely situated contingency) could be used to determine the minimum requirement to meet the two Major Regional contingency scenarios. Their logic stated that doubling the forces and personnel called to active duty for (ODS) then adding 50% to compensate for the possibility of a more hostile environment and less local logistic support, would provide the necessary number of Naval Reservists for a two MRC scenario. Fifteen percent of this construct was added to provide the required number of full-time support (TAR) personnel. The sum of these simplistic calculations in the Naval Reserve of 65,000 personnel recommended in the RAND report. It is interesting to note the "2.5 times the number of personnel and forces used in ODS" calculation was applied only to the Naval Reserve. If the same "logic" had been applied to the active Navy force, large portions of the Navy's force and capability would not survive, for example, the ballistic missile submarine force.

The independent objectivity of the CNA portion of the RAND report should be viewed with skepticism since CNA derives most of its income from the Navy, and their "Panel of Experts" excluded Naval Reserve experienced personnel while both the Army Reserve and the National Guard were represented by Major General members on RAND's "Panel of Experts." Different criteria were applied to the Naval Reserve than RAND utilized for the Army and Air Force reserve components. For example, CNA did not evaluate re-establishing the Naval Reserve aviation squadron augment units that were disestablished in FY'92 solely because of fiscal constraints.

RAND, on the other hand, discussed the efficiency of the Air Force associate (augment) units and recommended expansion of their program. There appeared to be no serious analysis of opportunities for the Navy to benefit from putting increased reliance upon its cost-effective reserve force, nor any mention of the Navy's apparent reluctance to recall combat units and personnel in ODS.

Utilizing only such proven cost effective additional tasks and missions as resurrecting the aviation squadron augment units, additional P–3 maritime patrol involvements, augmented air and sea logistic force support, and similar cost effective missions, the optimum strength of the Naval Reserve units in the Total Force easily climbs to the present FY'93 level of 133,675. Even using CNA's simplistic 2½ times the Desert Shield/Desert Storm recallees, without the Saudi's magnificent host country facilities, or with an extended conflict and assuming a more realistic recall of Naval Reserve combat units and personnel, the required base (recall) figure easily climbs from 20,000 when multiplied by 2½ to well above that needed to validate the current Naval Reserve end-strength of 133,675.

Recommendation

That the Navy portion of the RAND Alternate Force Mix Study report be disregarded and the current level of 133,675 Navy Selected Reservists be maintained for Fiscal Year 1994 pending further review and validation of the Navy's active/reserve force mix.

That greater reliance upon their reserve component be instituted by the Navy in compliance with repeated Congressional mandates.

FROM THE SEA: THE ROLE OF THE NAVAL RESERVE, A NAVAL RESERVE ASSOCIATION WHITE PAPER

The Naval Reserve Association has sponsored a White Paper focused on the Naval Reserve of the future. This White Paper will be forwarded to the Committee upon completion.

This paper reexamines the role of the Naval Reserve and the way those roles are trained for, administered and carried out. As the recent Navy and Marine Corps white paper ". . . From the Sea: Preparing the Naval Service for the 21st Century" depicts a new way for the entire Navy, so too does this White Paper propose new directions for the Naval Reserve force which backs up the active Navy both in war and in peace. This paper examines force structure, strength, organization and administration, missions and additional mission capability, responsiveness to gaining commands; and mobilization, crisis response and contributory support roles.

NAVAL RESERVE PROGRAMS/EQUIPMENT

The following Naval Reserve equipment list recommended by the Naval Reserve Association for FY'94 National Guard and Reserve Equipment funding is in addition to any anticipated migration of hardware from the reducing active Navy force, and represents major Naval Reserve hardware programs.

NRA recommended NG&RE FY 1994 Naval Reserve unfunded equipment requirements

[In millions of dollars]

HH–60H Upgrades (FLIR, weapons, other changes) for 18 aircraft	$52. 5
C–9 Replacement Aircraft (MD–87) (2)	62.8
P–3 Upgrades (IPADS), installation, spares, GFE equip. for 8 aircraft	40.0
Miscellaneous Equipment (see list below)	26.4
Portable Communications Equipment for EOD, MIUW, SEABEE units	9.3
Electronics Warfare Equipment (ALQ–126B) for 50 F–14 and F/A–18s	22.5
Civil Engineering Support Equipment (CESE) for EOD and MIUW Units	10.4
Flight Trainers/Simulators for several Type/Model/Series aircraft	88.1
P–3 Upgrades (SATCOM) for 64 aircraft	6.4
P–3 Upgrades—Digital Magnetic Anomaly Detection (MAD) (72 A/C)	16.6
A–6E Upgrades (SWIP, Rewing) for 5 aircraft	20.5
CESE, CEEI, MHE for Expeditionary Logistics Support Force (ELSF) and Cargo Handling ABFCs	21.7
C–20G Support Equipment (IMRL and ancillary items)	4.8
MIUW Van Upgrades (surveillance system enhancements, MSPS, PSPS)	20.4
CESE, CEEI, MHE for Reserve Naval Construction Force (SEABEEs)	35.6
AN/SQQ–T1 Trainers (integration in MIUW Surveillance Center vans)	11.0
C–130T Aircraft (2 aircraft, spares, and support equipment)	66.2

C–9B Mods (standardization of avionics and engines)	9.7
Total for the most significant Naval Reserve unfunded equipment	524.0
Miscellaneous equipment items:	
ADO Equipment (COMNAVRESFOR VAX, LAN, data communications upgrades)	7.9
F–14A ASW–27C air-to-air data link	1.8
F–14A armament (44 BRU–32 bomb racks and ADU–703 adapters)	1.5
AN/AQS–14 Mission Analysis and Training Equipment (MATE)	2.0
P–3C AFC–520 Color Weather Radar (CWR)	1.6
Bar Code micrographic processing equipment (for logistics operations)	.4
MOMAG training van (1 replacement mobile lab)	.2
ADP Equipment (logistics functions of ELSF ABFCs: NOACT, FFTU, SSU)	1.0
F/A–18A Support Equipment (for 4 VFA squadrons)	1.5
ADP Equipment (automates logistics functions of Cargo Handling ABFcs)	1.0
ADP Equipment (for contracting execution by deployed ELSF ABFC units)	.2
Naval Tactical Communication System—Afloat (NCTS–A) for NRF Frigates	1.3
Physical Security equipment for Reserve Naval Air Stations	6.0
Total for miscellaneous equipment	26.4

In this era of severely restrained and rapidly decreasing defense resources, the National Guard and Reserve Equipment procurement account becomes even more important and critical to the maintenance of a viable reserve component than in past years. The active components are less inclined to share their scarce resources to fund reserve equipment requirements. Certainly, if the cost-effective reserve components are to retain or bolster their forces as a result of accelerating build down of the active force, they need modern capable weaponry.

STATEMENT OF THE NON COMMISSIONED OFFICERS ASSOCIATION OF THE UNITED STATES OF AMERICA

Mr. Chairman. I am retired U. S. Army Sergeant Major Michael F. Ouellette, Deputy Director of Legislative Affairs for the Non Commissioned Officers Association of the United States of America (NCOA). This Association appreciates the opportunity to present its concerns and recommendations to the Subcommittee and requests support for issues NCOA considers vital to maintaining the high recruiting and retention capabilities this Nation has come to expect. NCOA is a federally-chartered organization representing all enlisted members of the Armed Forces of the United States; active, guard, reserve, retired, and veteran. Although its name implies restricted membership only to noncommissioned and petty officers of the Army, Marine Corps, Navy, Air Force, and Coast Guard, the Association's membership rolls are open to all enlisted men and women who serve or have served in the military services. It is through input from this wide-range member base that NCOA determines its position on defense appropriations and, in particular, military personnel and quality-of-life issues.

PRELUDE

NCOA has historically testified before this Subcommittee on behalf of the enlisted men and women of the U.S. Armed Forces. This year the Association will use the opportunity to define the effects the President's Budget may have on the quality-of-life of the members of the armed forces and emphasize the relationship to the FY 1994 appropriations process. NCOA has advocated improvements in people programs for years. Improvements in active duty compensation, COLAs, medical care availability and accessibility, retired pay and retiree benefits, military personnel and family programs, and an assortment other quality-of-life issues have always been identified as having a significant impact on recruiting and retention. In recent years, the main concern was the downsizing of the military services and the effects on military members. This year the members of the armed forces are faced with additional challenges that come in forms of tax increases, pay and allowance freezes, COLA reductions, inversion of retired pay, reduced survivor benefits, base closure impacts, possible loss of commissary benefits, and increased rent/lease costs. These challenges are being sold as "sacrifices" in support of budget reduction. In truth their sacrifices will fund other presidential priorities. Nevertheless, this Country will continue to maintain formidable fighting forces, although reduced substantially in size. The challenge facing the Subcommittee is to meet the mandate to provide appropriations that meet the Federal Government's responsibilities to provide for the needs of the American fighting men and women who constitute the military forces. The Association's testimony is designed to discuss the ramifications of proposed cost-cutting measures and offer recommendations for consideration during deliberations associated with the appropriations process. In the past this Subcommittee has always acted responsibly through concern and insistence on military personnel initiatives aimed at improving the quality-of-life necessities of the uniformed men and women of the U.S. Armed Forces and their families. NCOA is confident that efforts during FY 1994 appropriations deliberations will reflect the same level of concern.

SACRIFICE

The universal theme that binds together the Non Commissioned Officers Association is service to the nation. A major part of that service is sacrifice. For the active duty servicemember, that sacrifice manifests in family separations, frequent moves, hazardous duty, occasionally poor living conditions, etc. For military retirees and their families the sacrifices too often are personal health and economic well-being. Yet, for all the sacrifices they have already made, both active and retired military personnel remain ready to do more if what they are asked to do is perceived as fair.

Unfortunately, Mr. Clinton and the Congress seem to have focused their economic reforms on items the military would refer to as "targets of opportunity" because of their visibility. As a result, economic plans place a disproportionate burden on the active and retired military communities.

CONCERNS AND RECOMMENDATIONS

The following is a list of NCOA supported personnel and quality-of-life issues with a brief description of the Association's concerns and recommendations for the consideration of the Subcommittee. As the Subcommittee considers the recommendations we urge that you do so in the context that military personnel will sacrifice just like all Americans. They will pay increased taxes and suffer reduced services just like every other citizen. They should not be made to sacrifice to a greater extent just because they have chosen to be members of the U.S. Armed Forces at a time when deficit reduction is the order of the day.

ACTIVE DUTY PAY FREEZE

Following announcement of a plan to increase taxes, an additional sacrifice is proposed in the form of active-duty pay and allowances freeze in FY 1994 followed by increases which are one percent less than the increase in inflation in FY 1995 through 1997. In 1981, after experiencing severe recruiting and retention difficulties, military pay was raised to levels that were reasonably comparable to pay in the civilian sector for equivalent levels of work. Because of a number of pay caps since then, military pay has fallen to almost 12 percent behind the private sector. Imposition of the pay freeze in FY 1994, coupled with pay caps through FY 1997, will result in active and reserve pay short-fall of 20 percent below comparable private sector pay by FY 1997.

Recommendation.—Any proposal to target a portion of the military rank structure for a pay increase while ignoring the remaining ranks is unsatisfactory. For many years, NCOA has championed the cause of providing comparability between military and civilian pay. NCOA has also asked Congress to target pay raises to address compression of noncommissioned officer/petty officer pay. A targeted pay raise for lower enlisted and junior officer personnel only exacerbates the situation of NCO/PO pay compression. NCOA suggests to the Subcommittee that the settled-on pay raise percentage must be set at a level where everyone would receive equal treatment. NCOA would reluctantly agree to a pay delay of 3 to 4 months to provide the sufficient funds needed to maintain pay level consistency.

HOUSING ALLOWANCE RESTORATION

Eligible military personnel currently pay 20 percent of their housing costs when required to reside in civilian housing. When Congress restructured housing allowances in 1985, the primary intent was to assure military members would pay no more than 15 percent of housing costs from their pay. The Basic Allowance for Quarters (BAQ) was to cover 65 percent of national median housing costs per pay grade and the Variable Housing Allowance (VHA) would equal local housing costs minus 80 percent of national housing costs. Both allowances were to equal 85 percent of a military member's housing expenses, even in high cost areas. Unfortunately, BAQ has not kept pace with the 1985 standard of 65 percent of national median housing costs. NCOA is concerned that in a time of overseas strength reductions, base closures, and increased off-base housing utilization, the Administration's proposes to freeze housing allowances. NCOA believes this to be an intolerable situation for military people since rents and leases will be raised to off-set the higher taxes being paid by those homeowners renting to military members. It must be obvious to this Subcommittee that this situation is yet another sacrifice for military personnel and their families.

Recommendation.—It must be realized by the Subcommittee that a housing allowance freeze means absolutely nothing to a certain segment of the military population. Bachelor and married military members residing in government provided housing will not be affected; however, those forced to reside off the installation will experience a significant financial impact. Accordingly NCOA believes Variable Housing Allowances should be adjusted to relieve the additional financial burden placed on military personnel.

COST-OF-LIVING ADJUSTMENT (COLA) INEQUITY

NCOA is concerned that if Congress allows the FY 1994 Budget Resolution proposal to take effect, military retirees will suffer significant losses in income. The average military enlisted retiree in grades E6 and E7 receives a monthly payment of less than $1,049 in 1992 military retired pay. If COLAs for this age group are limited to one-half the amount authorized for those over age 62, a military enlisted member in the grade of E7 who retires in 1993 to meet force reduction targets after 22 years of service, will have forfeited $115,289.43 in retired pay by age 62. NCOA is disturbed that the under age 62 military retirees will provide the sacrifices needed to support the $2.7 billion savings in the FY 1994 Budget Resolution. Unfortunately, the major portion of the burden will be enlisted retirees since 64 percent of them are less than 62 years of age. NCOA wishes to point out to the Subcommittee that only 15 percent of civil service retirees are under age 62, the number is fewer if certain Federal civilian occupational groups, (i.e. law enforcement, fire-fighter and air traffic controllers), under age 62, are exempted from 50 percent COLAs as provided for in the Resolution.

Recommendation.—NCOA eagerly recommends that this distinguished Subcommittee champion the cause of full COLAs in FY 1994 for all military retirees and survivors at the same percentage as that provided to social security annuitants and veterans. NCOA recognizes that the obvious "rush to judgment" to support deficit reduction conflicts with this notion. However, the Association recommends that COLA increases for all military retirees be at the same percentage and that percentage be identical to any agreed upon active duty pay raise. NCOA believes this is the only answer if pay equality and consistency are to be maintained.

SURVIVOR BENEFIT PLAN (SBP) DEGRADATION

The proposed COLA reductions will have a severe impact on the ability of SBP to meet its intended purpose. That is to provide a monthly annuity to the survivors of military retirees. The amount of the annuity is based on a pre-selected percentage not to exceed 55 percent of the retired pay base amount. The one-half COLA proposal contained in the FY 1994 Budget Resolution will have a significant effect on the amount of survivor annuity the widow would receive should the retiree die prior to attaining age 62. The full COLA proposal for those retirees over age 62 will also succeed in causing consternation between the two categories of widows since the different COLA payment formulas will have a direct impact on retired pay base amounts which will result in varying levels of annuities.

Recommndation.—NCOA recommends that the Subcommittee clearly understand that SBP annuities are severely affected by any COLA reduction and emphasize the need to apply COLA formulas consistently across the spectrum of both active duty and military retiree communities.

MILITARY HEALTH SERVICES SYSTEM (MHSS) PRESERVATION

MHSS is essential to readiness, national disaster missions and mobilization. If the military services are to continue to recruit, train and retain a viable uniformed medical corps, the Nation must have a full graduate medical education program and a wide range of patients, from pediatrics to geriatrics. To reach this target and fulfill the moral obligation of the Nation to provide health care to its uniformed servicemembers (active and retired) their dependents and survivors, NCOA recommends that appropriations be specifically directed toward improving many current programs and providing health care alternatives for those military retirees affected by base closure actions.

Recommendations

—Provide uniformed and retired members of the armed forces, their dependents and survivors, continued access and availability to quality health care under the health care delivery system of the uniformed services regardless of age or health status of the beneficiary seeking such care.

—Extend 100 percent CHAMPUS coverage to dependents of active duty members of the uniformed services who reside with their sponsors at remote locations not serviced by a Military Treatment Facilities (MTF).

—Waive higher CHAMPUS deductibles during the year of promotion of married enlisted members from E4 to E5.

—Reduce the CHAMPUS Catastrophic Cap for retired members and their dependents to $3,000.

—Establish at the DOD level a dental insurance plan for retired members and their dependents, for "gray area" retirees and the Reserve components, similar to the plan now available for dependents of active duty members.

—Set in place alternative health care programs for retired members, their dependents and survivors at locations where military installations are to be closed or downsized before such action takes place.

—Restore CHAMPUS as a second payer to Medicare for retired members and their dependents who are Medicare-eligible on a "coordination of benefits" basis with CHAMPUS as a primary payer for those beneficiaries residing overseas and not covered by Medicare.

—Retain CRI in its present form but with modifications to make CHAMPUS Prime more cost effective.

—Test the concept of authorizing DOD to bill Medicare, at a discounted rate, for care provided to Medicare-eligible retirees and their dependents in the MHSS.

—Provide adequate Operations and Maintenance (O&M) resources in the FY 1994 medical budgets to ensure that no drastic curtailment in services or elimination of health care benefits to non-active duty beneficiaries will be experienced.

CONCURRENT RECEIPT

For more than fifteen years NCOA has pleaded with Congress to allow military retirees to concurrently receive longevity retired pay and veterans disability compensation. Only military retirees are treated differently in the receipt of disability compensation than other veterans. Under current law any disabled veteran may receive veterans disability compensation in conjunction with earnings from any other source. As a result corporate presidents, truck drivers, politicians and cooks are all treated the same. Even when they retire, they continue to receive their full veterans disability compensation. Win $60 million in the Illinois lottery, no problem, veterans disability pay will continue. Why? Because veterans disability pay is legitimate compensation for an injury or illness incurred in service. It is paid without regard to length or type of employment, unless the individual involved spent a career serving in the armed forces. Members of the armed forces must choose between receiving veterans disability compensation for injuries incurred in service or military retired pay based on length of service. Both are legitimately, separately compensable. Accordingly NCOA sees no legitimate reason to continue to discriminate in payments to military retirees.

In a separate but related issue, many disabled veterans are being deprived of either readjustment payments or disability benefits because of the same law. As you know, the armed forces are engaged in major force reductions. To compensate career servicemembers for lost career opportunities and to assist them in transition, the services are offering Voluntary Separation Incentive (VSI) payments and Special Separation Bonuses (SSB). Servicemembers who accept VSI/SSB separations are doing the government a favor by accepting early discharge. The payments they receive in return are relatively small when compared to what they are forfeiting in retired pay and benefits. Yet if after leaving service the member is judged to have a service-connected disability, they must either forfeit the entire readjustment payment they receive or forfeit their disability compensation. This is patently unfair.

Recommendation.—NCOA urges this Subcommittee to authorize the enactment of concurrent receipt legislation immediately. NCOA also urges the Subcommittee to exempt VSI/SSB and other readjustment payments from the compensation offset provisions of law. If VSI/SSB and other readjustment payments are not exempted, at issue remains the question of the refund of taxes deducted from the payments that become part of the VA recoupment action. If offset exemption is not authorized certainly tax relief should be provided.

ADDITIONAL CONCERNS

NCOA offers the following additional concerns for consideration by the Subcommittee during the deliberation process:

—The appropriation of funds to pay a CONUS COLA to personnel stationed in high-cost areas where current housing allowances and BAS are inadequate.

—Although the FY 1993 Defense Authorization Act temporarily extended the Temporary Lodging Expense allowance (TLE) from 4 to 10 days in certain areas, continued pursuit of permanent increased allowance for PCS moves is mandated by needs of military personnel.

—Authorize government sponsored transportation to the U.S. of the remains of deceased military retirees and their dependents who die while traveling in overseas areas.

—Expand the Homeowners Assistance Program (HAP) to benefit more personnel at all bases scheduled for closure/realignment and seek tax relief for members who receive such assistance.

—Continue to monitor and improve military transition programs to ensure that personnel being separated receive their full benefits as authorized by law.

—Ensure that Impact Aid "b student" appropriations continue to be made available to those military impacted civilian school districts responsible for the education of military children.

CONCLUSION

Even though the Cold War is over and it has become obvious to this Association that the current Administration as well as some Members of Congress have lost the enthusiasm for the care and feeding of American fighting men and women, the U.S. Armed Forces continue to be critical to the protection of the American way of life. It is therefore imperative that the quality of the force be maintained through effective recruiting and retention programs. In these times of tax increases, pay and allowance freezes, force reduction goals and other loss of benefits, military members may simply not be financially able to serve their Country. The loss of benefits being experienced by the retiree community could very well signal the need to look elsewhere to provide for one's future. The members of this distinguished Subcommittee are cautioned that although patriotism may be the key to retention, the inability to provide for the health and welfare of one's family will very rapidly diminish the enthusiasm for service. Congress has the responsibility to protect all military members and their families.

Thank you

STATEMENT OF THE RESERVE OFFICERS ASSOCIATION OF THE UNITED STATES

Mr. Chairman and Members of the Subcommittee, on behalf of the Reserve Officers Association, representing seven uniformed services, I am pleased to present the association's concerns relating to the Reserve components and the Defense Appropriations for FY94, and I would like to thank you for your past support of the Reserve components. Without your support, the Reserve components could never have responded as they did in Operations Desert Shield/ Desert Storm and other contingencies.

During Operation Desert Storm, the cost-effective Reserve components clearly demonstrated their mobilization and combat capabilities. Also demonstrated was the exceptional public support the Guard and Reserve generate when they are activated. Dependence on Reserve forces ensures that there is sufficient political support for military involvement before that option is exercised.

The Congress has repeatedly rejected large Guard and Reserve reductions, called for greater use of the Reserve components, and has directed the DOD to study the force-mix. In commenting on the DOD FY94 Budget Request, Secretary of Defense Les Aspin stated that the request "treads water" or defers making some critical decisions until the "bottom-up review," an analysis of threats and needed forces, can be completed. The "bottom-up review" appears to have superseded the analysis of the RAND report, directed by Congress. The secretary has suggested that the review will not be completed until August, and ROA is concerned that interim actions will jeopardize Reserve component readiness.

Some base closure actions and proposed end-strength reductions of roughly 15 percent for the Naval and Marine Corps Reserve components will have significant, negative short-term and long-term effects. Unlike the active components, whose missions during times of peace are that of full-time training, Reserve forces cannot be generated or reconstituted as rapidly. Unless Reserve component programs are adequately and timely funded, some Reserve capabilities will be lost forever.

Demographics are critical to Reserve component readiness. Units must be located to provide ready access to members. Unlike their active-duty counterparts who can be readily moved to new locations, Reservists are tied to their civilian employment and often unable to make a move. The closing of facilities or unit movements or consolidations can deprive the Reserve components of populations of quality, experienced personnel and thus eliminate capabilities or greatly increase training costs.

Because Reservists also have civilian careers, the effects of change and turbulence is especially devastating to Reserve component readiness. Base closure actions and end-strength reductions, which translate into personnel separations, not only deprive Reserve components access to trained and experienced personnel, they discourage and drive away Reservists who might otherwise serve. The Reserve components can benefit from the relatively large experienced pool of personnel who are being separated from the active components, but unless the Reserve components can provide some promise of a rewarding continuing career they will be unable to attract quality personnel.

Insufficient funding could seal the fate of the Reserve forces even before force mix and force structure analyses are completed. Without the roles and funding necessary to make participation in the Guard and Reserve meaningful, the Reserve components will degenerate, and cost-effective defense capability will be lost to this nation. Reservists want to be involved in real missions; they want to be a part of the first team. During an April House Armed Services hearing, the Reserve Chiefs confirmed that nothing is more critical to retention than meaningful missions and the perception that Reservists are a real part of the "team," the Total Force.

Before addressing specific service needs, I want to comment on two issues which affect all of the services and are of particular concern to ROA.

Command and control

The outstanding management and resulting readiness of the Air Force Reserve (AFR) has been singled out by the Congress and this association. AFR success can be attributed directly to the command and control of Reserve forces established by the Air Force and to the resulting allocation of resources. Complying fully with the intent of Public Law 90–168, the Air Force empowers the Chief/Commander of the Air Force Reserve to manage and command all of his forces in peacetime. Gaining commands establish operational readiness standards for AFR units and validate readiness through periodic inspections, but Reservists administer day-to-day activities to ensure readiness. A similar command and control structure exists for both the Naval and Marine Corps Reserves. The inability of the Army Reserve to achieve the high standards of readiness attained by the Air Force Reserve can be attributed directly to the fact that the Chief of the Army Reserve is not given the same command and control provided to the Chief of the Air Force Reserve.

ROA has led an effort to provide peacetime command and control of the Army Reserve to the Chief of the Army Reserve. Using their interpretation of the Goldwater-Nichols Act as a rationale, the Joint Chiefs of Staff are developing a proposal that would assign all Reserve forces to the unified and specified combatant commands during peacetime, prior to activation. This proposal ignores the importance of having Reservists trained and organized by other Reservists. If implemented, this proposal would institutionalize inefficiencies that have plagued the Army Reserve, impair the Naval and Marine Corps Reserves, and would destroy the very effective Air Force Reserve management structure.

We urge that the Congress specify in law that command and control of all Reserve forces remain with the Chief/Commander of the Reserve component until the forces are mobilized.

Reserve component transition benefits

One very visible confirmation of congressional support for the Guard and Reserve was the enactment last year of a transition package for members of the Selected Reserve who, because of the draw-down, are being forced out of the Reserve. The recognition by the Congress that these individuals are entitled to some form of recognition and compensation because their military career has been cut short is most appreciated. Unfortunately, the service personnel accounts were not funded to provide the benefits authorized. ROA requests that FY94 appropriations include sufficient funding for these important benefits.

Of concern also is the fact that the transition benefits which were authorized for members of the Guard and Reserve were not made available to members of the Coast Guard Reserve. This lack of fairness is exacerbated by the fact that members of the Coast Guard Reserve may prove to be among those most negatively affected by force reductions. The FY94 budget request would reduce the Coast Guard Reserve end strength by about 25 percent during the year.

ARMY RESERVE

Thanks to the interest of the Congress, today's US Army Reserve (USAR) is the best prepared, trained and ready Army Reserve ever. Due to congressional concern, the readiness of the Army Reserve has improved dramatically over the past several years. Without congressional assistance, the resourcing of the Army Reserve would be at much lower levels. Even with congressional support, when compared to the other Reserve components, the USAR has the lowest levels of equipment on-hand (EOH), the lowest percentage of full-time support (FTS) and unfortunately, because of this low-level of resourcing, the lowest level of readiness of all the Reserve components. We urge the congress to continue to resource the Army Reserve at higher levels to bring it to parity with the other Reserve components.

While today's Army is made up of the most talented active and Reserve forces in history, ROA agrees with the assertion that the post-Cold War world calls for a smaller and different Army and that we must assume greater risks in an uncertain volatile world. We believe that the "different Army" should be one that relies more on its Reserve component. The risk can be reduced if adequate resources are allocated to the Army Reserve and Army Guard. The USAR is the backbone of the Total Army's ability to go to war and sustain operations. It provides at a reduced cost, the myriad wartime support capabilities not required or affordable on a full-time basis in peacetime.

Once mobilized, the Army Reserve manages the loading and unloading of ships; expands the training and mobilization base here in the continental United States; provides logistical and medical support at home and in the theaters of operations; transports personnel, supplies, and equipment; builds roads, base camps, and fortifications; establishes and operates prisoner of war facilities; repairs equipment; conducts civil affairs and psychological operations; and from its Individual Ready Reserve (IRR) of over 400,000 personnel, fills active, Army Guard, and Army Reserve units with trained personnel. The Army Reserve has proven itself to be a successful and essential partner to the Total Army. It allows our Congress and our nation to maintain a viable and effective deterrent force at a much reduced cost.

The most critical issues facing the Army Reserve in FY94 are Major Army command (MACOM) status for the USAR, full-time support (FTS), funding, and equipment.

Major Army command (MACOM) status

The Reserve Officers Association urges Congress to support S. 969, recently introduced by Sen. Strom Thurmond, and H.R. 1827, introduced by Congressmen Greg Laughlin and G.V. (Sonny) Montgomery, which establish the US Army Reserve Command (USARC) as a separate major Army command (MACOM) reporting directly to the Chief of Staff, Army. These bills support the recommendation of the congressionally directed USARC Independent Commission in its final report submitted to the Secretary of the Army on October 15, 1992. MACOM status will fulfill congressional intent by removing the last costly and redundant layers of bureaucracy that currently inhibit responsiveness and obscure ultimate accountability. The chief, Army Reserve as its Commander needs to be directly responsible to the Chief of Staff, Army for training and providing federal Reserve forces needed for mobilization. The current subordinate command status significantly limits his authority and initiative.

Full-time support (FTS)

The entire FTS program in the Army Reserve appears to be the victim of misunderstanding. The level of FTS in the Army Reserve has always been and continues to be the lowest of any Reserve component. Thus, despite decreasing end strength, the need for FTS has not decreased. The full-time force of civilian military technicians, AGR soldiers and active-duty soldiers administers, plans, and maintains equipment which allows drilling Reservists to spend the maximum amount of precious drill time actually training. The FTS force also performs a vital training mission for drilling Reservists—training them on the newest equipment and the latest methods and doctrine used by the Army.

The FY94 DOD Budget Request reflects a FTS decrease of 95 AGR and 180 MILTECHs, and keeps the FTS level for the Army Reserve at eight percent (the lowest of any Reserve component). FTS continues to be a key factor in USAR unit readiness, with AGRs and MILTECHs offering the most flexibility for readiness improvement. The congressionally directed USARC Independent Commission recommended that the percentage of FTS for the Army Reserve should be 12 percent to bring it closer to parity with the other Reserve components that historically have had higher levels of readiness. We urge the Congress to restore AGRs to 13,500 and the MILTECHs to 7,500 in FY94. This restoral would be a first step to reaching a 12 percent FTS end strength in fiscal year 1996.

Reserve personnel, Army (RPA)

We are concerned that the FY94 DOD RPA Budget Request for $2.1 billion is insufficient. The budgeted RPA will provide for the pay for annual training (AT) and inactive duty for training (IDT) for the FY94 Selected Reserve (SELRES) end strength of 260,000 and for only some of the other vital needs for the base SELRES and other Reserve personnel. It fails to adequately support the various training and professional development education requirements of the Army Reserve. Specifically, there is insufficient funding in the School, Mobilization and Special Training accounts to pay for the support associated with the entire SELRES, the basic needs of the Individual Ready Reserve, and for the Reserve component transition benefits for soldiers who have lost unit membership due to force reductions. We urge the Congress to add FY94 funds of at least $71.6 million in RPA to allow the Army Reserve to be mission-capable and meet the recently authorized transition benefit obligations in FY94.

Operation and maintenance, Army Reserve (OMAR)

The DOD request for the FY94 Army Reserve O&M account is $1.1 billion. This budgeted OMAR level fails to provide the necessary support tail for the FY94 SELRES and MILTECH end strength. This shortfall in the FY94 request will force the Army Reserve to compensate by further reducing equipment and facility maintenance, operating tempo (fuel and repair parts) and supply purchases. Backlogs for maintenance service will probably continue to grow, and necessary support to essential training will continue to deteriorate, resulting in decreased readiness. We urge the Congress to add an additional $40.2 million in OMAR funds to meet this need.

Equipment

The Army Reserve's equipment-on-hand (EOH) readiness has improved significantly over the past several years, thanks to the attention of the Congress and the Department of Defense. Unfortunately, the Army Reserve still lags behind all other DOD Reserve components in the amount of required equipment actually on hand when compared to its wartime requirement.

Equipment-on-hand (EOH) for USAR units is currently 62 percent, the lowest EOH percentage of all the Reserve components. The percentage of EOH is critical to unit readiness and contributes significantly to the Army Reserve's historically low unit readiness figures. The Army procurement system is not designed to relieve USAR equipment shortages and has not been effective in doing so. It focuses on filling Force Package 1 and orients on combat arms systems while the USAR is mainly combat service and combat service support—thus little relief. Systems undergoing modernization only account for approximately 17 percent of the USAR equipment inventory. The promise of cascading equipment from the active component is hollow and at best has only provided the USAR with older equipment which reduces interoperability with the active component while increasing sustainment costs. The only solution to this continuing problem appears to be the Dedicated Procurement Program (DPP), which provides items not available in the active component inventory or in the force modernization program.

The Army Reserve has established priorities for equipment procurement. We support the Army Reserve's goal to equip its contingency force pool units in Force Package 1, its special forces, and its other early mobilizing and deploying units first. We urge the Congress to fund the FY94 Dedicated Procurement Program request for the Army Reserve.

AIR FORCE RESERVE

The Air Force Reserve (AFR) continued to demonstrate its capability and readiness in 1992 by flying more than 150,000 hours to all parts of the world in support of national interests. One third of the required airlift missions of the Air Force was accomplished by the AFR. This was possible because more than 99 percent of AFR airlift units were mission-ready and able to deploy within 72 hours.

Air Force Reservists served throughout the world in 1992. AFR airlift units flew thousands of tons of relief supplies to Moscow, Mongolia, the Middle East, Sarajevo, and Somalia. Fighters also contributed to the national effort when AFR F–16s began to patrol the no-fly zones over Iraq in December. The AFR simultaneously continued to meet its commitment to fly C–130 shuttle missions in central and South America. In addition to the participation of flying units, AFR medical personnel and civil engineers built, improved, or repaired schools, clinics, water supplies, and roads in Panama, Honduras, Ecuador and other locations.

Air Force Reservists were also involved closer to home, fighting forest fires in California, rescuing people from mountains and at sea, and working more than 25,000 man-days in support of anti-drug efforts. Besides flying 63 weather reconnaissance missions into 8 storms, Air Force Reservists flew 750 sorties with badly needed supplies in the wake of Hurricane Andrew.

The AFR's 301st Rescue Squadron provided the only helicopter rescue capability in the Homestead, Florida area for several days after the storm. The unit's members saved 137 lives, despite the fact that many of them had lost everything themselves to the hurricane.

All of this superb capability is a real bargain for the American taxpayer. The Air Force Reserve provides 20 percent of the Air Force's total combat capability with just over 80,000 people. Clearly, the AFR deserves the support of the Congress in maintaining its superb readiness and capability as an essential component of the Total Force.

One item that requires the support of the Congress is command and control of the Air Force Reserve, discussed in my earlier general comments. The high state of readiness and capability of the AFR is a direct result of Reservists leading Reservists. We ask that the Congress specify in law that command and control of all AFR forces remain with the chief/Commander of the Air Force Reserve until they are mobilized or called to active duty.

A measure of the reliance the Air Force places upon the AFR is the end-strength request of 81,500 personnel. This is only 800 below the fiscal year 1993 authorization of 82,300, and reflects the many new missions and requirements being assumed by the AFR. ROA urges the congress to support the requested end-strength for FY94.

Combat capability in the AFR depends upon many factors, full-time support personnel, Operations and Maintenance (O&M) accounts, modern equipment and facilities, as well as Reserve personnel. We ask you to support the dollars requested to fund these vital ingredients of the AFR's formula for success.

To maintain its combat capability, the AFR must have modern equipment consistent with that of the active force. Upgrades of existing aircraft is one way of maintaining this capability. We ask that you provide $68.21 million in addition to the AFR budget request for upgrades of C–130, AC–130, F–16, O/A–10, C–5, C–141, H–60, and KC–135. Operational requirements and safety demand that AFR aircraft be kept in the best possible condition.

Modernization also involves the replacement of obsolescent aircraft. Previously, the Congress provided funds to begin the replacement of the AFR's old C–130 aircraft at Peterson AFB, CO with new "H" models. We recommend that authorization and funds for four aircraft to continue the unit's modernization be included in FY94.

Training devices and simulation are areas that deserve increased support because of the cost-effective payoff in readiness and combat capability. The AFR has developed an F–16 Multi-Task Trainer as a low-cost Operational Flight Trainer equivalent. For less than $1.0 million per unit, it offers a self-contained, high-fidelity environment of exceptional realism. ROA recommends that the AFR receive an additional $32.189 for training devices in FY94. These include a C–130 simulator, fighter Multi-Task Trainers, and firearms simulators.

The AFR also has an unfunded requirement for $16.522 million for miscellaneous equipment. Although not as glamorous as aircraft, this equipment is vital to combat capability. Included are Scope Shield radios, electronic warfare ramp testers, improvements in computer technologies, communications upgrades, and vehicles.

As the past year has once again proved, the Air Force Reserve is shouldering an increasing share of the Air Force operational mission. The dollars recommended will be well-spent. With your continued understanding and support, the AFR will continue to provide a superb, cost-effective, combat-ready fighting force.

NAVAL RESERVE

The Reserve Officers Association strongly objects to the Administration's proposal to reduce the Naval Reserve by more than 20,000 personnel in FY94. If the request is approved, the Naval Reserve, which had grown to more than 151,000 personnel in FY91, would drop to 113,378, a reduction of more than 15 percent in a single year and 25 percent from the FY91 high.

This proposal is in direct conflict with the guidance congress provided to the services in the FY91 DOD Authorization Act which included the statement that, "The Department of Defense should shift a greater share of force structure and budgetary resources to the Reserve components of the United States."

When the Administration proposed to make similar cuts in Naval Reserve personnel strength in FY92 and FY93, ROA objected, Congress analyzed the situation, and restored much of the proposed force reduction. ROA strongly recommends that Congress make a similar restoral for FY94. It is all too apparent that the absence of important civilian leadership in the Department of the Navy and the Department of Defense has resulted in the creation of a Navy budget request not an Administration's Budget Request.

Role of the RAND report

ROA was optimistic that the report of the RAND Corporation would provide a reasonable approach to resolving the controversial issue of the proper mix of active and Reserve forces in the Navy. Unfortunately, such is not the case.

Our review and analysis of the RAND report resulted in an overall favorable reaction. In particular, it appears that RAND did develop an objective set of force-mix alternatives for the Army and Air Force. However, we do not have the same sanguine reaction to the portions of the report pertaining to the Naval Reserve that RAND subcontracted to the Center For Naval Analyses (CNA).

In fact, ROA has taken extraordinary action in the form of preparing an extensive white paper to critique the Navy section of the RAND report. This paper was published as a special edition of ROA's National Security Report for May of 1993.

The major points of this paper are:

—Reserve Forces provide a cost-effective alternative to maintaining the same capability in the Active Force.

—Reservists also provide a vital link between the Active Duty and civilian communities since the operate in both.

—Dependence on Reserve Forces ensures that there is sufficient political support before the military option is used.

—Reserve personnel came when called for Operation Desert Shield/Storm and those who had received the requisite training and equipment performed professionally.

—The Navy has by far the smallest share of its force structure in its Reserve component—less than 10 percent. The Army has approximately 50 percent and the Air Force 25 percent.

—The Navy will continue to resist increasing its dependence on the Naval Reserve until such time as its peacetime forward deployment requirements are formally reduced.

—The Center for Naval Analyses (CNA) portion of the RAND report does not provide the quality or depth of analysis needed to comply with congressional direction to place a larger share of the Navy's force structure in the Reserve.

—The CNA preferred alternative with a Naval Reserve of only 65,000 personnel was the result of a simplistic calculation, not comprehensive analysis.

—There are a variety of practical proposals for increasing the role of the Naval Reserve that should result in a Reserve force in the range of 125,000 to 135,000 personnel.

—Therefore, Congress should direct the Navy to develop a force mix policy that is consistent with its guidance and should reject any substantial reductions in the Naval Reserve until the requisite plans have been developed and approved.

Proposed reductions for FY94

Maritime patrol (VP) squadrons.—Again this year, the Navy is proposing to eliminate four Naval Reserve VP squadrons by reducing the number of such squadrons in the Reserve from 13 to nine. In light of the sustained superior performance and demonstrated efficiency of these squadrons, ROA recommends that the Navy again be directed to maintain at least 13 VP squadrons, of eight aircraft each, in the Naval Reserve.

Antisubmarine warfare helicopter squadron (light).—The budget request also includes the deletion of one of the three HSL squadrons in the Naval Reserve, HSL–74. This squadron operates the SH–2 helicopter that is an integral part of the ASW capability of the Navy's small deck frigates. The Naval Reserve HSL squadrons have been tied to the FF–1052s and FFG–7s assigned to the Naval Reserve. The FF–1052 requirement is being phased out. The number of FFG–7 class frigates assigned to the Naval Reserve may increase significantly upon completion of the on-going bottom up review within DOD. Therefore, ROA recommends retention of this squadron until the major issue of frigate and associated helicopter requirements has been resolved.

The vast majority of the personnel reductions needed to meet the drastic reduction requested for FY94 have not been identified by unit or location. Once again the reduction in the Naval Reserve has been demonstrated to be budget rather than strategy driven.

Summary

ROA recommends that Congress specifically direct the Navy to develop a plan for increased use of the Naval Reserve for submission to the appropriate committees of Congress for approval. In the interim ROA recommends that Congress moderate the proposed reduction of Navy Selected Reserve personnel by restoring 10,000 of the 20,297 proposed to be cut by the end of FY94.

This action would require authorizing an end strength of 123,378 Selected Reservist, including 20,821 full-time support personnel. This would also require the addition of approximately $58 million to the Reserve Personnel, Navy (RPN) appropriation to provide the requisite pay and allowances for these personnel and approximately $26 million in the Operations and Maintenance, Naval Reserve (O&M,NR) appropriation to support these personnel and fund the operation of the retained VP and HSL squadrons.

MARINE CORPS RESERVE

The President's Budget Request includes a recommendation for a substantial cut in the size of the Marine Corps Reserve to an end strength of 36,902 for FY94 from the 42,315 approved for this year, a reduction of 5,413 (–13%) in a single year.

For the past two years, Congress has been faced with requests to approve dramatic reductions in the Marine Corps Reserve. Each year a substantial proportion of the requested cuts have been rejected. Two years ago the proposed reduction of 3,000 for FY92 was modified by Congress to be 1,500. Last year, the proposal was to cut 3,500 to "get back on track" with the original plan. Congress accepted a reduction of only 85 personnel.

The proposed reduction for FY94 is so drastic because it again reflects the desire to "get back on track" by setting the same target for FY94 as existed three years ago.

A reduction in the size of the Marine Corps Reserve of this magnitude seems particularly inappropriate in light of the fact that the Marine Corps had the highest recall rate of all services for their Reserve components during Operations Desert Storm and Desert Shield (ODS). This high rate of use was accompanied by some of the most dramatic combat successes of any Reserve force.

Marine Corps Reserve requirements

The RAND report, which has been justly criticized in regards to its effort to develop force-mix alternatives for the Navy, was more objective and is being credited with completing the desired analysis when dealing with the Marine Corps Total Force. The range of alternatives developed for RAND by the team at the Center for Naval Analyses (CNA) that performed the Marine Corps analyses, would require between 23,000 and 82,000 Selected Marine Corps Reservists. However, the force-mix alternatives for the Marine Corps that most closely met the criteria of suitability, affordability, and sustainability all include 42,200 Selected Reservists, the approximate strength level approved by Congress for FY93.

In addition, the CNA analysis is consistent with the objective of the Commandant of the Marine Corps to maintain a force of 3.5 Marine Expeditionary Forces (MEFs), with 2.5 MEFs in the active force and one the Reserve. This force-mix translates to about 177,000 active-duty and 42,200 Reserve Marines. This force size and mix also follow the intent of Congress as expressed in its action on the fiscal year 1993 budget which provided for 177,000 active-duty and 42,313 Reserve Marines and includes a statement that congressional action that restored the personnel cuts proposed last year was "consistent with the expectations that the fiscal year 1995 end strength will remain . . . as currently provided in law."

ROA recommendation

ROA recommends that the Marine Corps Reserve be maintained at an end strength of 42,200. This will require the restoral of 5,280 Selected Marine Corps Reservists and the addition of $47.2 million ($39.3 million RPMC and $8 million in OMMCR) to fund a full training program for these personnel. Although this is a substantial requirement, it is considerably less expensive than the alternative of taking a drastic cut in 1994 and then attempting to affiliate and train replacement

Reserve personnel when the ongoing "bottom up review" validates the requirement for 42,200 Marine Corps Reservists.

CONCLUSION

The Congress is to be commended for its consistent support of Reserve component programs and personnel. The exceptionally high state of readiness can be attributed directly to congressional add-ons and initiatives.

There seems to be a consensus that as the active components are drawn down Reservists should be given a comparatively larger role, but base closure actions and the DOD Budget Request do not support the greater use of the Reserve components. The Reserve components have repeatedly demonstrated their effectiveness, and readiness only increases with the provision of meaningful missions. We believe that ongoing force-mix studies will confirm that cost-effective Reservists can and should contribute a greater share to national defense, but we are concerned that the size of proposed cuts and underfunding will diminish Reserve component readiness in the interim and seal the fate of some Reserve forces.

Thank you for the opportunity to represent the Reserve Officers Association's views on these important subjects. Your support for the men and women in uniform, both active and Reserve, is sincerely appreciated. I'll be happy to answer any questions.

STATEMENT OF SARGENT CONTROLS AND AEROSPACE

Mr. Chairman, thank you for this opportunity to submit my observations and opinions on the challenge of defense downsizing and its impact on defense contractors. My company, Sargent Controls and Aerospace, is one of thousands across the country whose future vitality may well depend on the government's ability to balance the competing demands of reducing defense spending while guaranteeing we will be able to meet future national security needs. This is not a simple task. As you are well aware, there is no easy answer. Every option carries its own set of problems. It is against that backdrop that we and other companies are now wrestling with our futures.

Conversion and diversification are popular notions in the current debate over the future of the defense industry, and they should be pursued where feasible. But they are not panaceas. They will not prevent disruption and dislocation. They will not spare us from hard decisions affecting the future availability of skills, facilities and technologies that helped win the Cold War—and may be called upon in the future to advance or protect U.S. interests around the world.

Some technologies are simply too advanced, too unique, and too important to our nation's defense requirements to be sacrificed in this manner. Submarines, in a class of their own as marvels of technological complexity, fall into this category. Though poles apart on a number of other issues, Secretary Aspin and his predecessor, Secretary Cheney, agree that our capability to build submarines must be preserved—now and well into the future. They also agree that the challenge of how to do that is one of the thorniest issues facing defense planners as we downsize and restructure the military for the post-Cold War era.

My company, Sargent Controls, exemplifies the challenge of defense in this difficult new environment. We deal in products and technologies with a single application: nuclear submarines. Our products—the valves, controls, and silencing technology—enable our submarines to run quiet as they run deep. As we all know, silence under the seas is more than a virtue, it is an indispensable element of survival. This has been our job for five decades, and we are good at what we do. Thanks to the efforts of a highly talented, well-integrated team of experts, we provide the Navy a unique technical capability. We have become a major participant in the defense industrial base. But the skills we provide are in jeopardy.

I am confident that Sargent can and will survive whatever decisions are made in Washington. If necessary, we will channel our energies into new products. Our employees will redirect their expertise to new areas. But if we abandon what we do best to pursue business outside our core experience, our special contribution to this nation's defense requirements will be lost. Conversion can save jobs—and it can save Sargent. But it will not preserve the expertise that helps make America's submarines the best in the world.

At Sargent, we're giving conversion a try. With the help of a federal grant, we are working to adapt some of the valves we produce for industrial use. We're also looking to broaden our customer base beyond the U.S. Navy by exploring opportunities in the aerospace, utility, and petrochemical industries. But for decades, Sargent's sole product line has been valves for submarines. In fact, there are Sargent valves on every nuclear submarine this country has ever built.

When your job is building components for submarines, expanding into new markets is no simple task. It is a difficult undertaking, rife with risks and tradeoffs. First, there are no non-defense uses for many of these products. Second, unlike other defense and non-defense companies, we are barred from foreign markets by laws and regulations restricting the export of sensitive technology.

So we find ourselves caught in an unenviable Catch–22 position: we can't stay in the defense business unless the Defense Department buys our products. And if we don't stay in the defense business, if we are forced to turn our back on what we do best, we begin chipping away at the technology base that underpins our nation's economic as well as military security.

As part of our national effort to make wise policy choices about the inevitable reduction of our military forces and our defense industrial base, we must keep in mind the inherent limitations (and consequences) of conversion. The limitations were clearly spelled out in a recent *Washington Post* article that asked "Is Conversion a Wash?" The *Post* noted that Martin Marietta was reconfiguring a sonar technology used to detect Soviet submarines for use by the Arbitron Co., a ratings service that measures television audiences for advertisers. According to the article, Martin Marietta has put 10 engineers to work on the project. On the other hand, it also has laid off 14,000 employees—in largely defense-related jobs—over the past six years.

As a practical matter, defense conversion does not have a spectacular record of success. The record is all too clear: many defense contractors simply lack the technical capabilities and marketing knowledge to compete with success in the civilian commercial marketplace. Because of the highly specialized nature of our products and the unique business environment in which we operate, defense firms have found it difficult—or even disastrous—to make the transition: to find commercial applications for defense technologies or to supplement defense-related business with experimental forays into civilian markets.

Some attempts at conversion have fared better than others. Accelerated cuts in defense spending will make conversion and diversification increasingly tempting options for more and more companies. But we must not lose sight of the fact that more is at stake than the mere ability of one company or another to reduce or end its reliance on defense, to then prosper in commercial markets. We must recognize that the outcome of this shakeout in defense will have a profound effect on our ability to meet future national security needs. And we must plan accordingly—taking care to assure that the know-how to build systems vital to our national defense is not lost forever in a rush to cash in on the end of the Cold War.

We recognize as well as anyone that the end of the Cold War mandates military restructuring. The nature of the threat has changed. We cannot remain locked into defense strategies that have outlived their usefulness. At the same time, we must retain the ability to deter or repel aggression, and to protect our interests around the globe. Basic defense requirements must be preserved—especially the kind associated with the design and construction of nuclear submarines.

The design, manufacturing, and construction experience of companies like Sargent is a valuable—even irreplaceable—national asset. Once lost, these special talents, resources, and facilities, developed over a half century, will not be easily or quickly reactivated—if at all. I share the view of Secretary Aspin, Deputy Secretary Perry, and others who suggest that is a risk we dare not take.

As we reshape our defenses for what is proving everyday to be an unstable, unpredictable post-Cold War world, we must find ways to maintain defense-unique skills ad technologies that otherwise would be lost forever in a wholesale conversion of defense industries to civilian purposes. The fundamental question is not whether Sargent or companies like it can survive without defense. It is whether this nation can meet its future defense needs without us. In the case of submarines, the answer is clear.

The inescapable truth is that the only way to sustain our ability to build submarines is by doing just that. There is no substitute for experience. We are dealing with a highly dedicated, one-of-a-kind technology base. We do not have the option of shelving people or mothballing facilities, then reactivating them at will. Shut down the submarine production line and the people integral to that process will move on to other, more marketable areas of commercial expertise. When the time comes to build the next generation submarine, those people will be off building fluid flow valves for power plants, rather than the silent valves crucial to this nation's undersea fleet.

As one corporate executive recently told Congress, "conversion is not a silver bullet." Where defense-related resources can be put to more productive uses for the good of the nation and the national economy, we should do so. But we must remember that we cannot eliminate irreplaceable capabilities—like submarine silencing—without endangering our long-term national interests.

STATEMENT OF SCHILLER INSTITUTE

Under the ostensible pressure of the "budget deficit," most government agencies today are seeking ways to cut their spending, especially spending in areas deemed inessential or peripheral to their essential mission. In the light of the somewhat overexaggerated collapse of the Soviet Union, much of what had been left of the Reagan-initiated Strategic Defense Initiative has been scrapped, although even long before this, the most interesting aspects of the program, dealing with the frontiers of technology such as laser-beam and directed-energy weapons had been well-nigh eliminated. Ironically this occurs at the same time that there is a growing consciousness that the U.S. economy is in dire need of a real "technological revolution" to boost its sagging productivity and to create the type of industrial growth needed for the 21st century.

Reviewing the somewhat defunct SDI proposal from the point of economics, rather than simply from the point of view of missile defense, one can better understand the vital importance of this program for the nation. Cuts in some areas will have immediate effects on the economy. It is our contention that cuts in the area of the SDI will have long-term, and very devastating, effects on the U.S. economy. One of the people most concerned with this question and a man who had done perhaps the most to promote and to win broad public support for the SDI proposal was Lyndon H. LaRouche, who during the first Reagan Administration was, in fact, negotiating with Soviet representatives on behalf of the Administration regarding possible US-Soviet collaboration on the development of the SDI. Let me just review some of the things he said at that time about the economic impact of the SDI.

In an article entitled "The Revolutionary Impact of the SDI on The Growth of the World Economy," (Executive Intelligence Review, vol. 13. no. 18, May 2, 1986), LaRouche noted three primary areas of technology which represented the "frontiers of physics": "The first, is the mastery of organized plasmas with very high energy-density cross-sections, including the development of fusion as a primary energy-source. The second, is the mastery of pulses of very coherent forms of electro-magnetic radiation, merely typified by the development of lasers. The third is the emergence of what is called either optical biophysics or "non-linear spectroscopy"; this is a new direction in biological and related research, carrying us way beyond the inherent limitations of so-called biotechnology." Most of these areas were central areas of research in the original SDI. LaRouche then goes on to outline the economic principles involved: "My standpoint is broadly identical to that of such exponents of the American System of political-economy, as Alexander Hamilton, the Careys, and Friedrich List. . . . In brief, the functional connection between technological progress and productivity, is demonstrated by comparing the potential population of so-called primitive society, of about 10 million individuals at most, with the present population, approaching 5 billion. This increase is due entirely to those kinds of modifications in human behavior, which the past 500 years history associates with scientific and technological progress.

"We can sum up the results of economic science, by stating that the possibility of increasing the potential population-density of humanity, depends upon conducting technological progress in an energy-intensive, capital-intensive mode. This means, that the amount of usable energy per-capita and per-square-kilometer must be increased it also means, that the portion of work allotted to capital improvements in land and work-places, must increase as a percentile of total work. For example: Without development of infrastructure, and without increasing rates of capital investment per operative, no nation is capable of sustaining technological progress in agriculture and industry.

"By 'economic science' we mean economic science as defined initially by Leibniz. Instead of simply 'economic science,' we might use the term used to describe the teaching of Leibniz's economic science in German universities during the 18th and early 19th century, "physical economy."

"It may be recalled, that Leibniz's founding of economic science was begun with Leibniz's study of the principles of heat-powered machinery. Leibniz's principles of physical economy, introduced to the United States by Benjamin Franklin and others, form an essential and integral part of what became known as the American System of political-economy. The further elaboration of Leibniz's principles, from the vantage-point of the 19th-century work of Gauss and Riemann, is indispensable to advancing the level of the American System of political economy beyond the level of advancement accomplished by Friedrich List and Henry C. Carey. This further elaboration of Leibniz's principles of physical economy, permits us to define the strategic economic impact of SDI technologies with reasonable precision."

In this article, LaRouche then went on to discuss the relationship between the SDI technologies and the further development of the space program in a Moon-Mars colonization program: "The establishment of artificial, habitable environments on Mars, and the need for continuously powered flight by flotillas, at one-gravity between Earth-orbit and Mars orbit, requires the technologies of controlled thermonuclear fusion, of coherent electromagnetic pulses of very high energy-density self-focusing effects, and of optical biophysics. It also requires dedicated types of parallel-processing computers in the megaflop range. . .

"Obviously, if it is feasible to establish colonies on Mars, it is a much easier task to apply the same technologies to such tasks as developing rich agro-industrial complexes in the middle of the great deserts of Earth. It is even cheaper, to revolutionize the design of new qualities of cities in the more agreeable climates of Earth. With these technologies, the Earth's food-supplies can be produced far more cheaply, more abundantly, by energy-intensive industrial-process methods, aided by applications of optical biophysics.

"The connection between the technologies of an SDI system and space-colonization technologies, is so immediate, that the research and development for the one is nearly identical with that for the other. If we could be certain that such technologies could be caused to spill over rapidly, from the military and space-engineering fields, into production generally, we can safely estimate that the productive output of an average operative could be increased by more than tenfold over a period of between one and two generations ahead. In general, we may say, that the firepower and mobility which certain technologies contribute to military capacities, correlate with the increase of productivities in the civilian domain.

"Therefore, the central practical question to be confronted by governments and industries in connection with SDI, is the question of assuring ourselves that this desired kind of spill-over of technologies into the civilian domain does occur."

At the time President Reagan committed the United States to development of the SDI program in 1983, there was a delayed, but violent, reaction from the Soviet leadership. Although, Reagan, as recommended by LaRouche, did in fact propose U.S. Soviet cooperation in developing a missile defense shield, the Soviets, already involved in advance work on such defense systems, calculated that the economic benefits of such a collaboration would benefit the United States more than it would the Soviet Union and they launched a campaign, (which was ultimately successful) to stop the U.S. program.

Now with the break-up of the Soviet Union and in a new atmosphere of cooperation, certain political circles in Russia have themselves articulated a proposal for collaboration in this area. I am including at the end of this testimony a copy of a translation of the Izvestia article of April 2, where the Russian proposal was first made public. The article also reveals some of the Russian work in the area involving precisely those plasma technologies characterized by LaRouche as one of the "frontiers of physics." Utilizing "Leibnizian" economic principles to create the spin-offs into the civilian economy, such a collaboration would also have the same beneficial consequences for the Russian economy as it would for the U.S. economy, as outlined in LaRouche's comments. If one wants to save Russia and the other CIS countries from economic collapse, the utilization of the tremendous scientific potentials of these nations must be realized in collaboration in the type of "frontier" areas as characterized in the Izvestia article. Ironically, such a renewed 501 collaboration would have the intended economic effects and also serve to maintain world peace—not only by making nuclear weapons "obsolete," but also by creating the type of economic growth in the CIS countries which could prevent the political and social strife which a continued economic collapse will inevitably carry in its wake.

STATEMENT OF THE AMERICAN LEGION

Mr. Chairman, The American Legion is pleased to appear before this subcommittee to express its FY 1994 defense appropriations concerns. Since the Legion's founding in 1919, it continues to be an ardent and consistent supporter of a strong national defense. In 1918 and 1945, this nation emerged as the world's leading power, and peace clouded its actions for preserving viable military forces. The "war to end all wars" and the "big one" were closely followed by Korea, Vietnam, Grenada, Panama, and the Persian Gulf War. The American Legion hopes that a national consensus for ensuring a national defense, second to none, is not blurred by the current whirlwind of changes in budgetary priorities following the Cold War.

The Legion believes this nation's military forces must be well-manned and equipped, not to pursue war, but to preserve and protect the hard-earned peace. As the world's only remaining superpower, America's military strength must not be weakened by massive and premature reductions in seasoned military manpower in a still dangerous and unstable world.

While Cold War threats of superpower confrontation have diminished, real and potential threats still exist. Our Armed Forces are deployed throughout the world in missions that are either familiar or new. They include a peacekeeping mission in Somalia and enforcing the no-fly zones in Iraq and Bosnia. We are witnessing increasing threats to the democratic reforms in Russia, as the United States is being drawn into the world debate to save these reforms. These uncertainties coupled with the retention of nuclear weapons in the former Soviet Republics and nuclear weapon development in North Korea are causes for concern to all Americans. America's leadership role in the world is changing, but it certainly has not ended. In fact, it appears to be expanding and deepening.

Mr. Chairman, the Fiscal Year 1994 Defense Budget Request seeks to reduce the active Armed Forces by another 108,000 so that military end strengths will reach 1.6 million by 1994, rather than 1995 and is projected to be cut even deeper in the future. The National Military Strategy, as recommended by the Joint Chiefs of Staff, called for a base force strength of 1.6 million by, 1995. Why are we accelerating the cuts faster than a recommendation by those whom we have entrusted with our national security? The Legion believes that this downsizing is based more upon fiscal imperatives than on current and foreseeable threat levels. Such a strategy is to be achieved by not merely reducing Active and Reserve Component strength levels, but by eliminating entire units. The Legion fears these proposed reductions gives new meaning to the term "hollow forces." It appears that the DOD is not only replicating the errors of past drawdowns, but may be creating new ones.

Recognizably, the FY 1994 defense budget represents the first budget since the 1990 budget summit whereby defense spending may be shifted to domestic priorities in the name of a peace dividend. We submit that if there were a so-called peace dividend, it should rightfully go to our veterans and men and women in the Armed Forces who through their many sacrifices won the hot wars and the Cold War and who have made possible the peace we enjoy today.

The FY 1994 DOD budget would also reduce the Bush Administration's budget authority by $10 billion and cut at least $88 billion from defense budget authority from FY 1994 through FY 1997. History has shown that cuts of this magnitude have had little assurance of reducing the deficit, as commendable as that objective is, but our past has repeatedly shown that such reductions in our defense posture have resulted in a weakened America that would invite threats to our national security well-being and inevitably place American lives at risk.

We believe that Congress should not accept any five-year defense projection without a detailed explanation of the Administration's defense objectives. Force structuring is a complex military art and not a predictable, exact science. We believe it is better to err on the side of maintaining larger forces. Today, threat-based planning remains reactive and largely incapable of performing the most important military function; namely, shaping the international security environment to deter the emergence of unforseen threats.

A strong national defense contributes to a strong economy—and does not detract from it. A strong national defense and a strong economy are in fact mutually dependent. A well-manned and well-equipped Armed Forces and a vibrant defense industry are an insurance policy which keeps more Americans employed with higher incomes in the business of national defense and provides the secure environment for our economy to flourish. The Armed Forces should not be penalized for a deficit it did not create and does not sustain.

The Legion believes that the DOD should proceed slowly and exercise great caution in downsizing one of the finest All-Volunteer Forces this country ever produced. Once trained personnel and units are gone, they cannot be rapidly reconstituted without the costly expenditures of time, money, and lives. We firmly believe that the inevitability of a smaller Active Duty force reinforces the need for fully combat-ready National Guard and Reserve Forces which are completely integrated into the Total Force, and that realistic missions be assigned to Guard and Reserve units which deal with our national defense.

Smaller Active Duty Forces also accentuate the need to retain our Selective Service System and its Registration Program. This cost effective, highly successful system insures that we have an identified manpower tool that could more rapidly augment our military manpower needs in the event of mobilization or extended warfare. Registration for the Selective Service also places the concept of service to the nation in its proper perspective with the direct involvement of Americans. The national defense needs of our nation is the business of all Americans.

Maintaining the quantity and quality of the All-Volunteer Force is directly tied to such factors as career stability, military pay, and the quality of military life. Over the past decade, we have developed a quality All-Volunteer Force which is well-trained, properly equipped, and professionally lead. We must insure that the resources which built this force are not the first candidates of reduced defense spending.

As an example of the adverse impact defense spending cuts are having on the All-Volunteer Force, the Chairman of the Joint Chiefs of Staff cited recent indications that recruiters are having difficulty meeting quality goals for new enlistees. There were drops reported in the percentage of high school graduates among new recruits and a substantial decline in the numbers of young men considering enlistment for each of the last two years. The reasons cited as the causes for diminished recruiting include reduced career opportunities, and a post-Persian Gulf War awareness of the "arduousness of military life." The American Legion supports increased funding for recruiting purposes in all the Services.

Mr. Chairman, there are a number of issues related to the quality of life for the dedicated men and women serving in the Armed Forces. Legionnaires, while visiting military installations, have detected considerable anxieties among military personnel who are being forced to make painful career decisions. These anxieties include the lack of career stability, a new directive on homosexuals serving in the Armed Forces, the proposed freeze on military pay increases in fiscal year 1994, and the continued erosion of military benefits.

The American Legion strongly opposes the proposed freeze on military pay increases in FY 1994 and capping increases in the next four years. We believe that the Administration is sending the wrong message to the All-Volunteer Force at the wrong time. Proposing to give pay increases to federal civil service and postal workers and not to the military, we believe, is grossly unfair. Annual military compensation raises in base pay and allowances must continue if we are to recruit and retain quality service members in the Armed Forces. We would point out that pay comparability between the Armed Forces and the civilian sector is still a goal, not a reality. DOD estimates that service men and women are still paid more than 12 percent below the civilian level.

Our commitment to attract the highest caliber youth to military service also strengthens our utmost support for the Montgomery G.I. Bill. The American Legion, which drafted the original G.I. Bill of Rights in 1944, fully supports "the Combat-Era Servicepersons' Readjustment Act of 1993" introduced on April 30th by Senator DeConcini. The Montgomery G.I. Bill was skillfully crafted to meet the needs of a peacetime, all-volunteer military system. The Combat-Era G.I. Bill will correct inequities of the current Public Law. The Persian Gulf War mandated that the nation's newest generation of wartime veterans receive the same degree of educational benefits as did others who answered their country's call to arms. Despite their wartime service, veterans receive only $400 per month or about 42 percent of the national average tuition and costs of attending a state-supported university.

We urge the Congress to adopt the Combat-Era Servicepersons' Readjustment Act. It would call for: (a) ending the $1,200 out-of-pocket contribution demanded of participants in the Montgomery G.I. Bill; (b) raising the maximum monthly payment to $777, up from the current $400 per month; and (c) authorizing G.I. Bill benefits for Reservists on active duty for more than 90 days, including Guardsmen and Reservists activated for the Persian Gulf War, and all former service members who participated in the Montgomery G.I. Bill.

The Legion has also noted that the Administration proposes to raise the soldier's annual contribution from $1200 to $1600 for Montgomery G.I. Bill benefits. Such an increase is unfair to service members and, in all likelihood, could adversely impact on recruiting efforts. We are particularly concerned that raising service members' contributions has been proposed while a more generous national service educational program for non-military participants is being considered. In our view, military service represents the most selfless service to the nation, and no national service program could ever compare to the risks, hazards and sacrifices endured by our men and women wearing the uniform of their country.

The American Legion is not denouncing the President for introducing a national service plan that would provide advanced education for hundreds of thousands of young Americans. We have always supported such education. As our National Commander Roger Munson stated: "We do think it is a strange set of priorities, however, when those who are currently providing a national service to their country are entitled to less benefits than those who have yet to serve their nation. What do we say to the brave young men and women who served in Desert Storm and many of whom at this very moment are on duty in such places as Somalia, flying over Bosnia and Iraq, serving at sea and stationed in Europe and Korea, and elsewhere? It is only right and just that we more adequately recognize the highest form of national service—service in the Armed Forces of the United States. "The morale of the Armed Forces is in a nose-dive and understandably so. First came defense cuts and involuntary discharges. Then came plans to lift the ban on homosexuals and the proposed freeze on military Pay increases. Now comes an educational package for national service that is superior to the G.I. Bill, and the veterans do not even have the opportunity to participate in it."

Families of military members are a major part of the quality of life equation. Whether a good soldier, sailor, airman or Marine remains in the service is often decided by the family's perception of whether an adequate quality of life is being provided by the Service and whether the service member and his family have been fairly treated in exchange for the hardships, family separations, possibilities of combat and the anxieties of force reductions which are all attendant to contemporary military life.

The American Legion also strongly urges Congress to preserve the guarantee of purchasing power for all retired military personnel by insuring that cost-of-living adjustments (COLAs) are consistent with inflation factors, regardless of age. We reject the proposal to cap military retiree COLAs by one-half of the CPI until they reach age 62. This age group of military retirees, for the most part, continues to be wage earners pursuing second careers and are too young to be fully retired. Again, the Administration is sending the wrong signal as military retirees younger than age 62, who comprise the majority of retirees, need to retain their purchasing power every bit as much as those age 62 and over. It is the continued erosion, or threat of erosion, of benefits such as these and promised health care which can, and will, deter quality people from pursuing a military career.

The alternate military retiree COLA formula proposed by Congressman Skelton appears to be more acceptable as it does not discriminate among retirees on the basis of age and would authorize full COLAs for all military retirees. This "rolling COLA," however, would be delayed from January to April 1994, and full COLAs would be paid every 15 months, instead of 12 months, so that retirees would forego one COLA in the period 1994 to 1999. While this plan appears to be more equitable, it nonetheless violates the content and spirit of the law (OB, 1986) which mandates full annual raises to all military retirees and ties their COLAs to those of social security annuitants.

Today, there are approximately 9.5 million beneficiaries in the military health care program; and military retirees and dependents make up more than 50 percent of that number. The sense of the Congressional resolution in the National Defense Authorization Act for FY 1993 reaffirms the basis of health care promised in law and tradition dating back more than two centuries. We in The American Legion believe that care can best be delivered through a strong, effective Uniformed Services Health Care Delivery System, trained and ready to support the full range of medical services.

Military retirees and their dependents are covered under the CHAMPUS health care system until age 65 when they are no longer eligible for CHAMPUS as they become MEDICARE eligible. MEDICARE covers much less than CHAMPUS and, like CHAMPUS, must be supplemented by expensive health insurance. Many of our military retirees are living on fixed incomes and were subjected to a tripling of deductibles. The American Legion supports full-funding of the CHAMPUS program by DOD and we favor legislation which would call for the continuation of CHAMPUS coverage for all military retirees beyond the age of 65. As a minimum, CHAMPUS/CVA entitlements should be used as supplemental coverage to MEDICARE.

We are all aware of the spiraling CHAMPUS health care costs and, unquestionably, health care reform is overdue. We oppose, however, the imposition of any premiums or medical user fees, as military retirees are already paying higher deductibles and co-payments.

The closing of some military bases can be explained away in light of the continuing downsizing of the force. However, the concomitant closure of military medical facilities will surely exacerbate an already serious health care situation. With the probable closure of at least nine military hospitals and/or clinics in the latest round of base closures, it is estimated that more than 260,000 beneficiaries will be affected with roughly one-third of them on MEDICARE. The impending loss of free prescriptions is particularly alarming for fully retired patients on MEDICARE which does not pay for medications.

The American Legion continues to support legislation to correct the inequity that prevents the concurrent receipt of military retired pay and veterans disability compensation. Unlike military retires, civil service retirees receiving veterans disability compensation are not subject to this restriction. The Legion recommends full payment of both military retirement pay and veterans disability compensation for disabled military retirees.

In creating involuntary separation pay, Voluntary Separation Incentives (VSI), and Special Separation Bonuses (SSB), Congress included provisions in the law requiring a forfeiture of these payments in an amount equal to any veterans disability compensation received after discharge. This is a carry-over of the unfair law which has historically prohibited the concurrent receipt of both pays. VSI, SSB and involuntary separation, or severance pay, are entirely different in scope and purpose than military retirement pay. They were designed to compensate service members for lost military career opportunities and to facilitate readjustment to civilian life. They are totally unrelated to any disability a service member may have incurred during his service. Those who were disabled in military service will face special challenges in readjustment during these difficult times. The Legion urges the Congress not to add to these challenges by requiring disabled veterans to fund their own disability compensation pay by an offset from their separation or military retirement pay.

The Legion also supports amending Public Law 99–145 to eliminate the provision that the automatic age 62 offset to the military retiree Survivor Benefit Plan (SBP) with social Security benefits. Military retirees pay into both SBP and Social Security, and their survivors pay income taxes on both. Military survivors should be rightfully entitled to receive both forms of benefit without any offset. The Legion believes that survivors of military retirees should also be entitled to receipt of full Social Security benefits which they may have earned in their own right.

Mr. Chairman, America's winning technology in the Persian Gulf War, like its victorious All-Volunteer Force, did not develop overnight, but had its genesis in the decade of the 1980's. The modernization of the Armed Forces must be a continuing process. Once a conflict develops, it is too late to decide whether America's defense industry has the capability to mass produce advanced technologies. The American fighting man, put in harm's way, must be equipped and armed with state-of-the-art technology. A vibrant defense industrial base will ensure that military production can surge when required.

The Legion supports the Army's RAH–66 Comanche helicopter production, the retention of an absolute minimum of 12-carrier Navy battle groups, development of a Navy stealth attack aircraft, continued production of SSN–21 Seawolf submarines, and production of the V–22 Osprey aircraft for the Marine Corps. The Persian Gulf War highlighted the dire need for the Navy to immediately augment its sealift and that our Merchant Marine be rebuilt as second to none.

We support the Air Force's modernization program for production of the F–22 fighter, continued and accelerated production of C–17 aircraft, and production of a new military space-launch system compatible with those of the private sector. The Legion also recommends maintaining the current inventory of intercontinental ballistic missiles and sufficient warheads to be a hedge against unforseeable threats.

The Legion firmly believes that as long as the potential for nuclear proliferation exists, that America should continue to retain its edge in nuclear capabilities as represented by the Triad system. The Strategic Defense Initiative and its follow-on Global Protection Against Limited Strikes (GPALS) and Brilliant Pebbles Systems should be sufficiently funded to allow development and deployment of at least a limited operational capability.

Finally, as we face continuing action for the foreseeable future on base closures and declining defense budgets, we urge your strong support for defense conversion programs; use of closing installations for National Guard and Reserve units for readiness purposes; and for continued DOD support of civilian marksmanship programs to inform and train American youth.

We would add that the Army National Guard and Army Reserve may run out of operations and maintenance money before the end of 1994 unless Congress provides additional funding. Also, uncertainty about the future of Army Guard units and individual career prospects appears to be the most significant factor prompting Guard members to quit. As you have stated (Senator Inoye), Army Reserve units are having to cannibalize in order to keep higher priority units combat ready.

In conclusion, the United States has entered five major wars in this century. Only in Operation Desert Storm were we fully prepared to fight. That should serve as a reminder that deterrence is meaningless without a strong military force, the will to employ it, and the support of the American people.

As Somerset Maugham once wrote: "If a nation values anything more than its freedom, it will lose its freedom; and, the irony of it is that if it is comfort or money that it values more, it will lose that too."

Mr. Chairman, this concludes The American Legion statement.

STATEMENT OF THE CENTER FOR ADVANCED CONTROL SYSTEMS

Mr. Chairman, thank you for the opportunity to testify before this Committee again this year. As you may recall, I testified here last year and described a concept whereby Moog Inc. would assume a leadership position in the establishment of a Center for Advanced Control Systems, as part of the Government's defense conversion initiative. Relative to Defense Conversion, much has happened in the intervening year, both as far as the Government and Moog Inc. are concerned.

The 102nd Congress approved the Defense Conversion, Reinstatement, and Transition Assistance Act of 1992. Included in Title IV of this Act is $100 million for Defense Dual-Use Critical Technology Partnerships. As part of the Conference Report on H.R. 5504, the conferees directed the Center for Advanced Control Systems be funded at $3 million as one of the Defense Dual-Use Critical Technology Partnerships.

At Moog Inc., we had a very difficult year downsizing our business. In the process of reducing our domestic workforce by 500 people from a previous level of 2,200, we reported a net loss of about $7 million on sales of slightly over $300 million. These 500 people were highly skilled machinists, assembly technicians and support staff. We made minimal reductions in our engineering, research, and development staffs and set these people to work to develop new products for markets where the end CHAMPUStomer is someone other than the United States Department of Defense. Moog Inc. is no newcomer to this type of defense conversion; in that since our founding in 1951, we have had to contend with similar circumstances in the aftermath of the Korean War and the Viet Nam War. As a second-tier supplier of precision motion control hardware, we are fortunate that our technology is readily applicable to commercial aircraft as well as to industrial automation and machinery. As a result of prior conversion activities, our non-defense related products now account for about 40 percent of our worldwide sales.

Our decision to retain all of our engineering capability was based on our presumption that the $3 million for the Center for Advanced Controls would be made available in an expeditious manner. It is impractical to consider laying off these extremely talented people, thinking you could rehire the exact same group when the funding was finally released to the Center for Advanced Controls. So we have retained the people and have them working on projects of limited scope because of the limited funds we have to support the costs associated with such product developments.

Despite letters from Mr. Murtha, Senator Inouye and this Committee (the Defense Subcommittee of the Senate Appropriations Committee), as well as letters from our New York State representatives Paxon, LaFalce and Nowak; Senator Moynihan; and Governor Cuomo directed to the Secretary of Defense Les Aspin and the Director of ARPA, Dr. Gary Denman, we have been unable to obtain the release of the $3 million to fund the initial activities of the Center for Advanced Controls. ARPA has issued a Request for Proposals on May 14, 1993 as part of the Technology Reinvestment, and Transition Defense Conversion, Reinvestment, and Transition Assistance Act of 1992. Further, having reviewed our "White Paper" describing the Center in detail, ARPA has indicated we should propose the Center for Advanced Controls and in light of the specific technologies to be developed, they "believe that a proposal based on their plans will be very competitive." ARPA has also indicated their intention to announce the winning proposals in October 1993, at the earliest, after which the specific contracts would have to be negotiated, and then funds could be released. All of which sounds as if the earliest we could see any funding is the first quarter of 1994.

In the meantime, our engineers have been adapting our defense technologies to commercial markets, albeit at a reduced level. We have had several successful projects already. These clearly indicate our ability to do technology conversion. A brief description of two of these projects will illustrate what can be accomplished.

Over the past ten years, Moog has been developing a core of technologies related to materials and component designs capable of functioning under extreme conditions such as high and low temperatures, corrosive environments and high vibration environments. Concurrently, a variety of efforts are underway around the U.S. to develop vehicles capable of running on natural gas. Since natural gas is more abundant, less expensive and burns much cleaner than liquid petroleum fuels, there is a high level of interest to apply natural gas technology to long haul trucks, city buses, taxi cabs, delivery trucks, etc. When natural gas is used as a vehicle fuel, it is either compressed to a high pressure or stored as a liquid at a very low (cryogenic) temperature. In either case, the refueling nozzle and vehicle receptacle present significant technical challenges.

Using our core technologies and some technology we had developed for an Army rapid refueling project, we developed a cryogenic refueling nozzle for large trucks and city buses. In less than one year's time, we have designed and field tested prototype units. Last month, we received a pilot production order from the Houston Metro Bus System for this product. We are currently working with several other bus and truck fleet operators as well as equipment manufacturers and anticipate volume production orders in the near future. This will immediately put some of our manufacturing people back to work and also has significant leverage in that the lack of a high quality, reliable refueling system is one factor that has been holding back the broader application of natural gas to vehicles.

The second example has been our development of a large motion platform for the entertainment simulation market. A recent trend in the entertainment industry is to put seats on a motion platform to allow the viewer of a movie of such things as a roller-coaster, a bobsled, a race car, etc., to experience the motion as well as the visual sensations. To move the platform, large, powerful actuators are necessary. These actuators are similar to those used on large missiles such as the Titan or the MX. Using technology we had been developing for the next generation of large missiles, Moog Inc. has developed a unique approach to these type platforms. In less than one year, we designed, tested and have sold eight of these units that cost several hundred thousand dollars. We expect this to be just the start. Several entertainment production companies have approached us to design similar platforms for their specific applications. Again, this has provided real incremental jobs not only for Moog but for numerous subcontractors. In addition, many of the end CHAMPUStomers for these systems are overseas, so this effort will have a positive effect on the U.S. balance of trade. This is a direct example of the conversion of military technology to a commercial use but it also has a dual use aspect as well. The platform development has advanced the state of our motion technology that can be applied to future military applications. In addition, the machinery, equipment and people who are producing this hardware can equally as well produce military hardware. So it is directly preserving our industrial base.

These are just two of the examples of how Moog Inc. has been able to convert its defense hardware capability into commercial products. Because the technology for precision motion control is so universally applicable and is a critical element for aircraft, missiles, tanks and spacecraft, it is an ideal candidate for an effective defense conversion project. Our ability to accomplish the goals of defense conversion are severely limited by our ability to finance the up-front engineering work. This is why funding for the Center for Advanced Controls is so critical for us.

Another aspect of defense conversion is the expectations of Congress when it began this initiative over a year ago. The committees who studied the effects of a reduced Defense budget, the Defense Authorization and Appropriations Committees as well as the entire Congress recognized the need to maintain our defense industrial base as well as the need to put the one million people who have been laid off from defense suppliers back to work, producing commercial hardware as rapidly as possible. To date, none of these expectations have been met because none of the funds have been released. At the same time, this Congress is working on a Defense Bill for 1994 in which a higher level of funding is expected for Defense Conversion and Technology Reimbursement Projects. In addition, the Clinton Administration has taken a keen interest in these activities and would like to demonstrate some positive actions taken as part of its economic stimulus efforts.

Perhaps there is a convergence of interests here for Congress, the Clinton Administration, the Pentagon and Moog Inc.'s proposed Center for Advanced Controls. We are in a position to start today to expand and accelerate our defense conversion initiatives. We have a demonstrated record in conversion projects. We have all of the elements in place to implement a Defense Dual-Use Critical Technology Partnership as described in ARPA's May 14, 1993 Program Information Package for Defense Technology Conversion, Reinstatement, and Transition Assistance. Because of these circumstances, it would make real sense for the Center for Advanced Control Systems to be funded immediately as a demonstration project to show how defense conversion can actually be accomplished. We can trudge ahead on the ARPA time scale which would mean losing another year or this committee could indicate to the Secretary of Defense, who is an outspoken architect of defense conversion, that a demonstration project could be of real benefit to everyone now.

I trust you can understand our frustration at this point in not being able to push ahead with the Center. We live in a small town in Upstate New York and we would like to put some of our friends and neighbors back to work. What we need is some seed money to help accelerate the development of new products and new markets.

The second point I would like to raise with the committee is the future funding for the Center. Our proposal to the committee last year was for a $30 million appropriation to be spent at the rate of $10 million per year. What came out in the conference report was $3 million for one year. Since the majority of the projects proposed by the Center extend over about a three-year time period, it is necessary to obtain a multi-year commitment for the Center to be really efficient and effective. We would therefore request the committee to recommend the Center for Advanced Control to be funded in this year's budget at the $30 million level described in our testimony last year.

In the process of organizing the Center, we have identified a number of projects that meet the conversion objectives. Some of these projects by their nature extend over a three-year time period, while others would be accomplished in a shorter time. These and other potential projects currently under preliminary investigation total over $30 million. All of these projects are within the general areas of technology detailed in the ARPA announcement. These areas of technology were identified by ARPA in an internal survey of their organizations as well as a survey of the Department of Commerce, the Department of Energy, the National Service Foundation and NASA; Hence, the projects to be pursued by the Center are in direct support of those areas identified as being critical for defense needs, as well as, having the highest potential for effective and rapid commercialization of defense technologies.

In order to provide ARPA with all the information they need, the Center has prepared a proposal as indicated in their May 14, 1993 Information Package for the Technology Reinvestment Project (TRP). The Executive Summary of the proposal is a concise description of the Center, its objectives, its pervasive impact and a brief description of the initial projects. The Executive Summary follows. We would be pleased to provide the Subcommittee with the entire proposal.

This proposal describes the Center for Advanced Control Systems (CACS). The Center is a consortium of companies and universities, lead by Moog Inc. of East Aurora, New York, who have the background, interest and technical capacity to form a "Defense Dual-Use Critical Technology Partnership" with the Federal Government. The objective of the Center is to advance the state-of-the-art of controls technology through the development of new controls products. The effect of this research and development will be to create new jobs as a result of the manufacturing of new products, to preserve and enhance our military industrial capabilities, and to create the next generation of controls technologies for military, industrial and commercial aircraft application.

The initial consortia members are Martin-Marietta Aircraft Controls, G.W. Lisk Company, the State University of New York at Buffalo, and Moog Inc. These entities will collaborate on seven different projects. It is anticipated that multiple requests will be made so that additional projects can be undertaken and that other consortium members will be added. Calspan Corporation, Acme Electric and Cornell University have expressed interest in participating in the Center as other projects are identified in which their technical capabilities can be brought to bear. Moog Inc. is working with each of the entities on other control-related projects.

Each of the manufacturing companies is an ideal consortium member in that each:

—Has a very extensive background in controls technologies and controls component designs

—Is primarily a manufacturing company who intends to produce the products developed through these projects

—Has been severely impacted by the down turn in defense spending and is struggling to maintain its research and manufacturing capacities

—Has a technical capability, recognized as a leader in its field, that is complimentary to the other members

—Has worked on collaborative projects with the other members

It is these factors as well as the world-recognized record of achievement of each of the members that gives the Center its outstanding capacity to develop the next generation of controls technologies.

Incorporated under New York State not-for-profit law on October 8, 1992, the Center has elected a ten-member Board of Directors and has had its initial Board meeting. The Board of Directors will receive the funding, select the projects to be funded based on the technical and commercial merits, review periodic technical and financial reports and ensure compliance with the technical and financial requirements of the funding mechanisms. The Center will have no employees but will draw on its members for its administrative needs. The intention is to minimize the overhead so that the maximum funding can be applied to real engineering to produce a useful product.

The Center for Advanced Control Systems is an ideal candidate for a "Defense Dual-Use Critical Technology Partnership" because of the wide range of applications where precision motion controls can be applied. Control systems find application on tactical and cruise missile fin actuators. Strategic missiles and space launch vehicles rocket engines are positioned by these controls. Commercial and military aircraft employ these controls to move flight control systems, control fuel flow in their engines, steer the landing gear, and control their brakes. Gun turrets, missile launchers, satellites, helicopters, radar antennas, torpedo fins and glide bombs are all positioned or steered by precision motion controls. Each of these applications will demand improved controls technologies and components. Without funding through the TRP, the research to support these advanced will be severely curtailed.

Precision motion controls are also applied to a wide range of productivity enhancing machinery and equipment. Applications include: machine tools, metal-forming machinery, skin-riveting machinery, plastic blow and injection molding machines, gauge controls in steel mills, fatigue test machines, structural load test machines, flight simulators, railroad track levelers, high-speed trains, automatic paving and concrete-forming machines, steam turbine controls, mining machinery, and robots. The technology is absolutely necessary for any type of automated machinery. Aerospace and industrial applications use very similar technologies but, in each case, it is optimized for the particular application.

It is this inherent dual-use nature of controls technology that makes it so suited to the TRP. This is a technology that is a key element in many U.S. advanced-technology industrial and aerospace products because their overall performance depends to a critical degree on the performance of their control systems. If the U.S. is to maintain and enhance its defense production capability, control systems must be supported. In addition, if the "Roll-Over-Plus" and "Silver Bullet" concepts are to be implemented, the next generation of control systems must be conceived, designed, built and tested. The projects being proposed here by the Center for Advanced Control Systems supports each of these initiatives.

The TRP Program Information Package also recognizes the need for advanced controls technology. In Appendix A–1 the need for next generation flight control actuators is described in the "Fly-By-Light" section; the need for improved aircraft engine performance and, therefore, advanced materials for engine actuators is mentioned, and the need for improved alternative power vehicle drives is also described. Each of the projects proposed by the Center directly supports the technology thrusts mentioned above.

The following is a brief summary of the Center's initial projects:

"Smart", Fly-By-Light Actuators.—As "Fly-By-Wire" systems evolve into "Fly-By-Light" systems, the flight control and other actuators will contain their own electronics that will be linked to a central computer by an optical fibre data bus instead of a heavy and expensive wire "harness". This project will prototype an actuator capable of installing and operating in a production aircraft.

Fault-tolerant electric servoactuation.—The movement toward electromechanical actuation for "more-electric" aircraft as part of the "Fly-By-Light" technology focus area will require new concepts in fault-tolerant actuation. This project will prototype an electric actuator with the safety and performance required by a flight-critical control surface—an industry "first".

Advanced materials for actuators.—The next-generation, high-performance aircraft will demand actuation which is capable of higher operating temperatures and is lower in weight. This project will build and test prototype actuators manufactured from advanced materials to provide the experience required to correctly select and design with these materials.

Electric vehicle drives.—Electric vehicle traction drives will require light-weight, highly efficient D.C. motors. This project will prototype and vehicle-test a 200 hp motor using aerospace cooling techniques to reduce its size and weight by two-thirds.

Electric motion simulators.—The design and manufacture of low-cost, all-electric motion simulators for entertainment rides is a "spin off" project from current aerospace technology. This project will create new jobs and lead to a "spin-on" to low-cost, all-electric defense vehicle simulation.

High temperature electromechanical actuation.—"All-electric" jet engines for "all-electric" military and commercial aircraft will require electric actuators capable of operating in the hot, exhaust region of the engine. This project will prototype a high-temperature, electromechanical actuator incorporating a previously developed, high-temperature motor and a patented control concept.

Electric propulsion for small commercial satellites.—The new generation of small commercial satellites to be used in large numbers for new communication systems requires efficient electric thrusters much lower in power than has previously been practicable. This project will prototype a new electric thruster concept smaller in power by an order of magnitude than those currently available.

While these projects relate to leading-edge control components and systems, they all expand the "pool" of controls technology that can be drawn upon for the entire range of applications designed for precision motion controls.

The total cost for these projects is estimated to be $11.4 million, of which, $6.8 million is scheduled to be expended in FY94 and $4.6 million in FY95. The cost proposal section details the projects by individual task. The Center's members have each committed to the required 50 percent cost sharing so the funding being requested from the TRP is $3.4 million in FY94 and $2.3 million in FY95. The members of the consortium are all in full compliance with the statutory requirements applicable to Defense Dual-Use Critical Technology Partnerships (10 U.S.C. § 2511).

This proposal to fund the Center for Advanced Control Systems presents the TRP with the opportunity to fund development of a technology critical to the national defense and vital for numerous commercial aerospace and industrial applications. The consortium members all have a demonstrated record of successful conversion of defense technologies and are committed to the manufacturing of the products developed in these projects. These elements combine to make the Center for Advanced Controls the ideal candidate for a defense-conversion partnership.

In summary, Mr. Chairman, we would request your immediate action to request the DOD to release the $3 million designated in last year's Conference Report for the Center for Advanced Controls as a demonstration project. Second, we would ask you to include a $30 million appropriation in this year's defense bill for further funding of the Center for Advanced Control System.

Thank you for this opportunity to testify. We look forward to working with you on this critical initiative.

STATEMENT OF THE CENTER FOR HEALTH TECHNOLOGIES, INC.

Mr. Chairman and distinguished members of the Subcommittee, thank you for the opportunity to submit testimony on behalf of my colleagues from the Center for Health Technologies, Inc., a non-profit corporation based in Miami, Florida. Last year you identified CHT as a critical component to the nation's defense conversion efforts by approving a $1 million grant for CHT in the Fiscal Year 1993 Department of Defense Appropriations Act. The funds will allow CHT to assist in the conversion of defense technologies to civilian health purposes.

You were right in supporting our efforts at CHT, and today CHT is recognized by the State of Florida as a model defense reinvestment program for communities throughout the state that are struggling with the economic impact of the nation's defense drawdown. I was especially pleased to participate in an event sponsored by the Florida Chamber of Commerce, in which I took part in a "Defense Reinvestment" panel that included Senator Bob Graham, Congressman Jim Bacchus, Congressman Earl Hutto, and Congresswoman Tillie Fowler. While participating on that panel I spoke of the critical role that CHT will play in defense reinvestment by providing a range of services to assist small companies transfer defense-related technologies into health applications.

CHT has only started a program that has the potential to make a dramatic impact on the communities of Florida. Our vision is to address both the human impact of the defense drawdown by assisting displaced workers as well as the economic impact by assisting small companies throughout the region. I am requesting your continued support of CHT's defense conversion efforts to help us realize our vision for the future.

THE CHT MISSION

The Center for Health Technologies, Inc., (CHT) is a non-profit corporation based in South Florida which began operations in late 1990 with a start-up grant from the State of Florida. The primary mission of CHT is to facilitate and expedite the growth of new health technologies companies through the transfer of laboratory developments into successful biomedical, biotechnology, and health care products and services. To accomplish its mission, CHT utilizes an Incubator approach, an organizational mechanism whereby start-up companies are provided with a broad range of services to assist them in developing into self-supporting health technology businesses. Currently there are 25 small companies with CHT affiliate status, with other start-up companies waiting to affiliate with the Center. CHT expects more than 100 companies to pass through the Incubator over the next 8 years.

DEFENSE CONVERSION PROGRAM

Most recently, CHT has undertaken a direct and active role in the nation's defense drawdown through programs to convert defense-based technologies into health technologies. Congress approved a $1 million appropriation in the fiscal year 1993 Department of Defense Appropriations Act providing CHT with funds to assist in the conversion of defense technologies into programs dedicated to the improvement of public health. The specific objectives of the project is to assist small companies whose technology-based businesses have depended on defense contract support.

For the purpose of this program, CHT formed a consortium with three major Health Technology companies, Coulter Corporation, Baxter Diagnostics, Inc., and North American Biologicals, Inc. These companies are part of CHT's network of regional corporate support, and serve on CHT's Board of Directors; all three companies have had defense contract experience.

The basic elements of the CHT partnership program, which will be continued and expanded if the requested funds for FY 1994 are received, are as follows:

—Provide assistance to selected small companies to make the conversion from defense-based production into a health technologies business. This type of conversion will involve restructuring a part of the technological base of the company's research and production capabilities from a defense to a biotechnology orientation;

—With the assistance of its three corporate partners, CHT will select eligible small companies based on the following criteria; need—impending loss of some or all of their defense support; potential for conversion of a significant portion of the technology into biomedical applications; and desire in making the suggested transition;

—Once selected, the candidate will be integrated into the CHT's Health Technologies Incubator as a start-up company, and will be provided with the same services as CHT's 25 other small company Affiliates receive as they progress into commercial businesses. CHT's expertise and success with its health technologies incubator programs will be a key factor in the success of the proposed defense conversion activities;

—In conjunction with its partners, CHT will continue to seek eligible small companies to integrate into the program. In addition, there will be a program designed to publicize the availability of qualified companies.

—The consortium will organize a quarterly series of regional workshops to publicize defense conversion program, and will provide experts from the DOD and industry who will provide guidelines to companies on the general principles and implementation techniques applicable to defense conversion.

EXAMPLES OF DEFENSE CONVERSION EFFORTS

Mac Systems Corporation (an affiliate of the CHT's)

Mac Systems is a small Florida corporation working exclusively with the Department of Defense funding on anti-submarine warfare (ASW) projects, competing with such giants as AT&T, Raytheon, Lockheed, BB&N, and others. Mac Systems is highly specialized in the integration of modern computer hardware and software into prototype operational systems for the U.S. Navy.

This high technology application is directly usable by medical and healthcare organizations. A conversion of Mac Systems' skills and experience into medical applications will result in computerized medical imaging systems which will be smaller, less expensive and technically superior to current commercial imaging equipment, and will thus make such instrumentation available to small hospitals, clinics or even physicians' offices which can not afford the high price and maintenance cost of current medical imaging systems.

Mekanika, Inc. (an affiliate of CHT's)

Mekanika, Inc., based in Miami, Florida, is an R&D intensive orthopaedic product company specializing in the development of spinal implants, and interoperative surgical and diagnostic instruments. Mekanika has cooperative research programs with the University of Miami, where it does all of its cadaver, animal and clinical testing.

Mekanika has formed a working partnership with Sparta, Inc., based in San Diego, California. Sparta is a defense contracting firm, and has received an NSF SBIR Phase I award for the development of a composite material femoral bone plate for fractures of the femur. This venture was Sparta's first defense conversion attempt for application of their defense engineering technology into production of a biomedical product. Mekanika and Sparta are cooperating on the development of a rigid composite implant for the spine, combining Sparta's defense-based technology with Mekanika's biomedical skills. The combined companies require assistance from CHT to launch their joint biotechnology project.

Coulter Corporation, Baxter Diagostics, Inc., North American Biologicals, Inc.

CHT formed a consortium with three major health technology companies with significant defense conversion experience. Recognizing the importance of CHT's efforts to promote the economic development of the Health Technologies cluster in Dade County, all three companies serve on CHT's Board of Directors and will serve as regional networks of support.

Of particular importance to CHT, will be each companies role of bringing skills and expertise to the Incubator to train small companies. The three large companies will assist CHT through workshops, training, and technical assistance.

REQUEST FOR FEDERAL PARTNERSHIP

We are grateful for this Subcommittee's past support and we are anxious to move forward with this project and begin to expand the current scope of the defense conversion initiative. I am before you today to request your help to continue our partnership for this program's development.

I believe the program at CHT is a valuable contribution to the Department of Defense's reinvestment program. Of particular relevance is CHT's program to provide assistance to selected small companies in making the conversion from defense-based production into a health technologies business. This type of conversion will involve restructuring a part of the technological base of the company's research and production capabilities from a defense to a biotechnology orientation.

Furthermore, this program will support the research and development of critical health technologies that both meet defense needs and have civilian applications. Through CHT's current partnerships with leading health technology companies, CHT has developed regional networks of support that will bring their skills and expertise to the Incubator to train small companies.

Mr. Chairman, with the past support of this Subcommittee, we will begin to complete the initial phase of our defense reinvestment program. In an effort to move forward with the program, I am requesting $3 million for fiscal year 1994 for CHT to assist in the conversion of defense technologies to civilian health purposes. I truly believe that what we are doing in South Florida is extraordinarily worthy of federal support and is responsive to a national need for reinvestment of valuable defense resources into critical health technologies businesses.

Thank you for your consideration.

STATEMENT OF THE MILITARY COALITION

Mr. Chairman and Distinguished Members of the Committee, the Military Coalition would like to thank the Chairman and other distinguished members of the Subcommittee for holding these important hearings. The testimony provided here represents the collective views of the following military and veterans organizations that comprise the Coalition's membership of some 3.5 million active duty, reserve, retired and veteran members of the seven Uniformed Services, plus their families and survivors.

Air Force Association
Air Force Sergeants Association
Association of Military Surgeons of the United States
Association of the United States Army
Chief Warrant Officer and Warrant Officer Association, United States Coast Guard
Commissioned Officers Association of the United States Public Health Service, Inc.
Enlisted Association of the National Guard of the United States
Fleet Reserve Association
Jewish War Veterans of the United States of America
Marine Corps League
Marine Corps Reserve Officers Association
Military Chaplains Association of the United States of America
National Association for Uniformed Services
National Guard Association of the United States
National Military Family Association
Naval Enlisted Reserve Association
Naval Reserve Association
Navy League of the United States

Non Commissioned Officers Association
Reserve Officers Association
The Retired Enlisted Association
The Retired Officers Association
United States Army Warrant Officers Association
USCG Chief Petty Officers Association

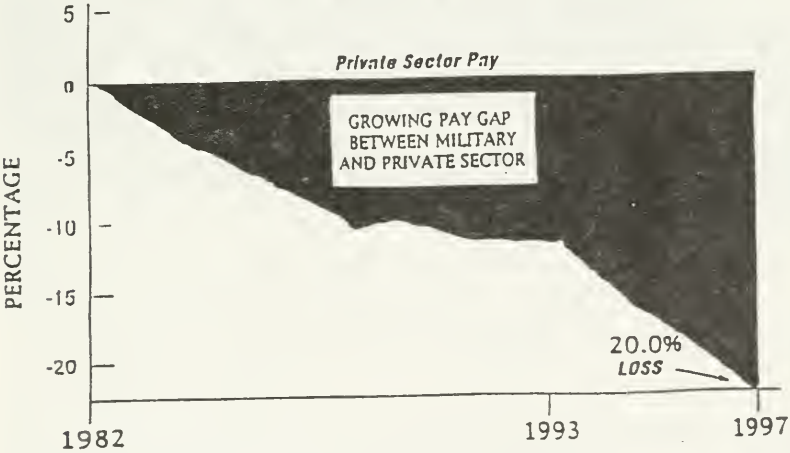
INTRODUCTION

The Coalition is concerned that as more budget-driven decisions are made, funding for new and current initiatives will be limited. The Budget Resolution already proposes to freeze active duty and reserve compensation and to cap cost-of-living adjustments to military retired pay. Further, other proposals are under consideration to reduce funds for the military health care system, and other programs of major concern to servicemembers and their families. The Coalition finds these Administration and Congressional proposals to be unfair, inequitable and, most certainly a breach of faith and promises made to the Nation's Uniformed Servicemembers, active, reserve, retired and veterans. Each served this Nation when called upon to defend its Constitution, its shores, its citizens and its allies. Surely, they, their spouses and survivors deserve more than to be severely penalized financially through efforts to divert funds from defense to deficit reduction and private sector initiatives. It is from this perspective that we present our views and recommendations to you.

PAY FREEZE THREATENS ALL VOLUNTEER FORCE

It is difficult to imagine a more ignominious way to thank the troops for their exemplary responses to the challenges of Operation Desert Storm and Operation Restore Hope than to propose that they receive no pay raise in FY 1994 followed by increases which are 1.5 percent less than those provided to private sector employees in FY 1995 through 1997. A pay freeze next year, coupled with pay caps through FY 1997, will cause active and reserve pay to fall to a level 20 percent below comparable private sector pay. (See following chart.)

Military Pay: A Decade of Degradation



This chart reflects the degradation in military pay since 1982 when military pay was raised to levels comparable to those in the private sector. By 1993 the gap was 11.7%; under Clinton's plan, it would widen to 20.0% by 1997.

The Employment Cost Index (ECI), a Bureau of Labor Statistics survey of private sector wages, was adopted as the standard for the pay increases necessary to sustain the all volunteer force. Since then, in 8 of the last 11 years, military pay has been capped below the ECI. Today, military pay lags private sector pay by 11.7%. Those caps will produce $8.5 billion in deficit reduction savings out of servicemembers' pockets in FY 1994 alone without adding pay freezes and caps to squeeze more from military families over the next 4 years.

The Nation is reducing its military force to levels not seen in 50 years. Servicemembers who are retained must be able to meet the stringent requirements of a high-tech force and excel in a wide variety of assignments. Hopefully, the Administration and this Congress have not become so complacent after 12 years of quality recruiting and high retention that it believes it can cut the defense budget, downsize the forces, eliminate job security, damage morale and still continue to have a quality all-volunteer force. Will it be that our Nation's Executive and Legislative bodies will be unable to recognize the crisis until, like the late 1970s, they have, once again, laid waste our capability to deploy a combat-effective force?

The Coalition recommends that this subcommittee lead the way in appropriating funds for a 2.2% across-the-board pay raise for all active duty and reserve uniformed personnel in FY 1994.

INCREASED PERMANENT CHANGE OF STATION REIMBURSEMENTS

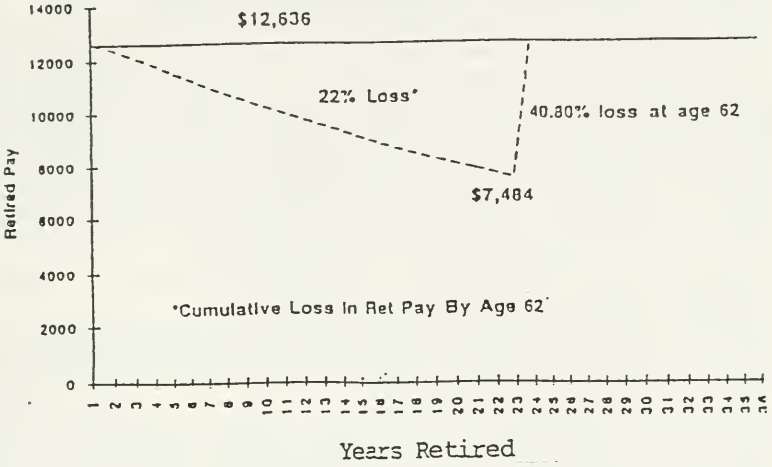
The FY 1993 Defense Authorization Act increased the temporary lodging expense (TLE) from 4 to 10 days but limited the increased reimbursements to locations where the local housing market was adversely affected by the military drawdown. For all other members, TLE has remained unchanged since 1986 when the DOD Authorization Act made TLE an entitlement. The current TLE allowance falls substantially short of the 60 days members are authorized for overseas moves and of the 120 days maximum afforded Federal civilian employees during either Continental U.S. (CONUS) or overseas moves. Recent Air Force surveys indicate temporary lodging expenses constitute the single largest unreimbursed expense borne by military members during CONUS PCS moves. Virtually all members report they require temporary lodging for more than 4 days during their PCS move, and most require temporary quarters for more than 10 days.

The Coalition recommends that a 10-day TLE entitlement be extended to all CONUS locations in FY 1994.

COLA DISCRIMINATION

Over the past decade because of caps, delays, and freezes, military retired pay has fallen 7.8 percent behind inflation as measured by the Consumer Price Index (CPI.) If Congress allows the FY 1994 Budget Resolution proposal to take effect, military retirees will suffer extraordinary losses in income. In 1993, the average military enlisted retiree in grade E–7 receives a monthly payment of less than $1,095 in retired pay. If COLAs for this age group are limited to one-half the amount authorized for those over age 62, an enlisted servicemember in pay grade E–7, who retires in 1993, would lose $63,448 in retired pay in 1993 dollars by the time he attains age 62. The dramatic impact of the 50 percent COLA is illustrated in the chart on the next page. The E–7 is chosen as a selected example of the impact 50% COLAs would have on typical enlisted retirees.

Impact of 50% COLA E-7



E-7 Age 39; 5% Inflation

What is disturbing to The Military Coalition is the double-whammy on military retirees and their survivors suggested by Congress. First, military retirees would have had to bear the brunt of the $2.7 billion savings in the FY 1994 Budget Resolution. For example, 64 percent of enlisted military retirees and 37 percent of the officers are less than 62 years of age. Only 15 percent of civil service retirees are under age 62. The number is fewer if certain Federal civilian occupational groups, (i.e., law enforcement firefighters and air traffic controllers), under age 62, are exempted from 50 percent COLAs as recommended in the Budget Resolution.

Second, future military retirees and survivors are earmarked for a pay freeze for FY 1994 and continued pay caps thereafter. This action would further reduce the purchasing power of this group, and in the Coalition's opinion, adversely affect the close relationship between the retired military community and our active and reserve uniformed servicemembers.

Both provisions are blatantly discriminatory against military retirees and their survivors. In the first case, military personnel, like the Federal civilian groups that the Budget Resolution would exempt from the half-COLAs, are required to retire early. The military services have established high years of service tenure points (i.e., maximum years of service thresholds) for each pay grade. Few Armed Forces members reaching those exit points are permitted to remain on active duty and only in the rarest of circumstances is a military retiree permitted to remain in service until age 62. The overwhelming majority must retire in the mid-to-late 40s.

TMC strongly protests such highly discriminatory treatment of military personnel and sees no other recourse but to urge this distinguished subcommittee, as a protector of military personnel entitlements, to ensure that our servicemembers receive fair and equitable consideration by the very Congress that has the responsibility to raise our armies and navies.

The Coalition recommends that you champion the cause of COLA equity in FY 1994 and provide all military retirees and survivors the same COLA increase as that provided to veterans whose pensions and compensation are paid by the Department of Veterans Affairs, and to Social Security annuitants.

Please keep in mind that military retirees are veterans too.

ENHANCING THE SURVIVOR BENEFIT PLAN (SBP)

Partially subsidizing the supplemental SBP.—The Coalition has expressed concern to the Committee on Armed Services that meaningful changes to the SBP have not materialized despite the recommendations of a 1991 congressionally-directed OSD study group. In its draft, the study group recommended that the SBP supplemental option be partially subsidized by DOD. For example, retirees could elect to provide their spouses an SBP annuity of 35 percent for a premium of 6.5 percent of retired pay, 40 percent for a premium of 7.3 percent; and 45 percent for a premium of 8.1

percent. Under the study group proposal, annuities above 45 percent (that is, 50 or 55 percent), would be at no additional cost to DOD and would be actuarially neutral based on the age of the retiree on the date the election is made.

Despite overwhelming empirical data to support the study group proposal, the final DOD report recommended against any subsidy for annuities above the basic 35 percent second tier annuity. It is puzzling to the Coalition why the government SBP subsidy for federal employees is 51 percent for participants in the Federal Employees Retirement System and 59 percent for those covered by the Civil Service Retirement System, but only 44 percent for the military SBP. The SBP annuity is 50 percent for FERS survivors and 55 percent for CSRS survivors compared to only 35 percent for the military SBP. To further illustrate the disparity, the study group analysis revealed that a military retiree who elected an unsubsidized supplemental annuity of 55 percent (as proposed by DOD) would actually receive an overall government subsidy of only 27 percent. How can anyone reconcile that the 27 percent is comparable to the FERS/CSRS 50 percent plus subsidy?

The Coalition recommends that the military's SBP be subsidized at 44 percent of supplemental options at 40 and 45 percent.

Provide SBP to "forgotten widows".—The SBP terminated the Retired Servicemembers Family Protection Plan (RSFPP) for members retiring on or after September 21, 1972, and created an open enrollment period for members already retired. Although the open enrollment period was initially 12 months' duration, it was later extended through March 20, 1974.

This SBP open enrollment period inadvertently created the first category of "forgotten widows." These were widows of "career" retirees who died before the SBP was enacted on September 21, 1972, and during the open enrollment period before making a decision about participation in the plan. Unlike its Civil Service predecessor which provides annuities to Federal civilian "forgotten widows", there are approximately 20,000 pre-1974 military "forgotten widows" whose needs have yet to be addressed. The number decreases every day.

The SBP also provided survivor coverage to members of the reserve components who earn their retired pay through a combination of active and inactive service but do not receive payments until attaining age 60. However, SBP coverage became a hollow promise for many reservists and inadvertently created another category of "forgotten widows". Retirees who met all requirements for entitlement to retired pay but died before being able to receive it at age 60 were unable to protect their dependents under the SBP. Public Law 95–397 of September 30, 1978, corrected that disparity for future reserve retirees by giving them the opportunity to elect survivor benefit coverage for their spouses and children when completing 20 years of qualifying service.

Although the law created an opportunity for those who had already completed 20 years of qualifying service to participate in the Reserve Component SBP, it did not provide coverage for widows of Reserve retirees who died prior to its enactment. Thus the second category of "forgotten widows" evolved—the pre-1978 reserve widows. DOD has estimated that there may be about 10,000 widows in this category.

The Coalition recommends active and reserve "forgotten widows" be provided an annuity of $165 per month or $1,980 per year.

Note: TMC has requested the Committee on Armed Services to authorize other SBP proposals. If authorized, the Coalition respectfully requests funding for any of the provisions requiring appropriations.

PROMOTING THE HEALTH CARE MISSION

On March 3, 1993, the Coalition briefed the White House Health Care Reform Task Force (on Defense) concerning the health care initiatives it considered essential to the Medical Mission. The major elements of the presentation that may require funding are incorporated below.

Promise of health care for life.—Prior to the early 1950s, the promise to provide free military medical care to military personnel was not questioned. By statute and tradition throughout their military careers and in retirement such care was provided in military treatment facilities (MTFs) for those who could use those facilities. At that time and for years afterward a lifetime of medical care appeared plausible since the military medical system had, in fact, honored these promises. Thus, it was reasonable to believe uniformed and civilian military officials when they promised such care to potential recruits and candidates for re-enlistment needed to man the large military forces required to fight the Hot and Cold wars.

Codifying access to the MHSS.—By 1956, Congress made space available medical care in MTFs an entitlement for active duty dependents. Retirees and their dependents were also authorized space available care. Also in 1956, Congress concluded that the direct care medical system was inadequate for the dependents of active duty personnel and enacted legislation authorizing the Defense Department to contract with private sources to supplement care for dependents of active duty members, who due to travel distances or other reasons, could not use the military treatment facilities. Ten years later, this contract authorization was extended to retirees, their dependents and survivors.

The CHAMPUS alternative.—The Civilian Health and Medical Program of the Uniformed Service, CHAMPUS, was enacted in 1966 because the increasing numbers of retirees and dependents of the large active duty force necessary to deter the Soviet Union and communism around the world made it increasingly difficult to provide such care without major increases in the military medical staffs. The motivation for including military retired members under age 65 in CHAMPUS is that after Congress enacted the Medicare system in 1966 (covering retirees aged 65 and older), retirees under age 65 (and dependents) were the only group of beneficiaries not covered by any medical insurance system.

CHAMPUS required the Defense Department to pay 80 percent of allowable medical costs for active duty dependents and 75 percent of the allowable cost for retirees and their dependents. The current annual deductibles are $150 per person up to $300 per family, except for enlisted personnel E–4 ad below who pay $50 per individual or $100 for the family. The beneficiaries are required to pay the remaining balance of the cost of the medical care they receive, to include any charges above allowable costs.

Today, according to defense officials, there are about 8.2 million beneficiaries, with retirees and their dependents comprising over 50 percent of this group. This large increase in retirees and dependents obviously is due to the large military force needed to fight WW II, the subsequent hot wars and the 45-year Cold War. To meet the active force requirements following WW II, the Defense Department used aggressive recruiting and retention programs, especially after the demise of the military draft system. To recruit and retain military manpower at congressionally-mandated levels, commanders and recruiting and retention officials promised (in exchange for 20 or 30 years of dedicated and devoted service) retirement security to include retired pay (later to be protected by inflationary increases), lifetime free medical care, and lifetime use of other institutional facilities such as post exchanges and commissaries.

As U.S. armed forces are reduced and military installations and MTFs are closed or realigned, space available medical care is becoming even more scarce. One of the adverse side-effects is age discrimination, even though current law provides for the treatment of space available eligible beneficiaries without regard to age. In practice, age discrimination exists simply because it is in the financial interest of the Defense Department to conserve CHAMPUS funds by treating beneficiaries under 65 inhouse and forcing Medicare-eligible beneficiaries to rely on the private sector where the Health Care Financing Administration (HCFA) picks up the tab. Care for CHAMPUS eligible beneficiaries in MTFs permits DOD to save the more costly expense of referring these beneficiaries to the "for profit" private sector, which now costs about twice as much as treating them in MTFs.

These Military retirees especially resent the fact that after earning what they thought was free lifetime medical care in exchange for 20 to 35 years of service, sacrifices, and minimum wages, they are now being turned away from that care.

The Defense Department should not be permitted to abandon its responsibility for the medical treatment of military retirees and dependents who are 65 and older. In recognition of Defense's obligation to fulfill the promises made to military personnel, the 102nd Congress took a critical first step in 1992 by acknowledging the validity of the promise of lifetime medical care in a "Sense of the Congress" resolution. The language is contained in Section 726, National Defense Authorization Act for fiscal year 1993 (Public Law 102–484).

"It is the sense of the Congress that—(1) members and former members of the uniformed services, and their dependents and survivors, should have access to health care under the health care delivery system of the uniformed services regardless of age or health care status of the person seeking the health care.

The next critical step (recommended to the Committee on Armed Services) is to enact legislation to recognize the explicit and implied promises and provide a defined, lifetime benefit for military retirees, their families and their survivors, regardless of age. Other recommendations are as follows with the request to this distinguished subcommittee to provide appropriated funds for those that may be adopted in the FY 1994 National Defense Authorization Bill.

Equity: Assignment to remote duty.—Health care coverage is not equitable for dependents of active duty members who are assigned to duty stations not served by military medical treatment facilities (e.g., recruiters, ROTC instructors, Coast

Guard). These dependents are forced to rely on CHAMPUS with its attendant copays and deductibles. CHAMPUS is not accepted by all physicians, so the choice of health care provider is often limited or the member must absorb higher out-of-pocket expenses because of balance billing. Conversely, dependents of active duty personnel assigned to bases with MTFs have the choice of free care at MTFs, if available, care through direct referral to civilian providers, or care through CHAMPUS.

The Coalition Recommends providing for 100% health care coverage for active duty families residing with their sponsored servicemember assigned to locations without access to MTFs or without contracts with local providers. CHAMPUS copayments and deductibles should be waived for these families.

Equity: Loss of CHAMPUS when Medicare eligible.—Military beneficiaries who are 65 years or older lose CHAMPUS benefits if they are eligible for Medicare. Many Medicare supplemental plans have pre-existing medical condition clauses which preclude coverage for those medical conditions for six months. Consequently, many Medicare-eligible military beneficiaries are confronted with significant out of pocket costs for care for uncovered medical conditions in that six month period. The financial burden is aggravated, because loss of CHAMPUS also means loss of prescription drug coverage, particularly for individuals not residing within commuting distance to military facilities. Another legislative aspect associated with the loss of CHAMPUS is that Medicare does not provide coverage for individuals who travel or reside overseas.

CHAMPUS was reinstated as second payer for Medicare-eligible beneficiaries under age 65, who are disabled, but the reinstatement is temporary and requires continuation on a permanent basis. Further, CHAMPUS benefits for disabled Medicare beneficiaries under age 65 who have End Stage Renal Disease or who are disabled survivors or former spouses, are provided care on a benefits-less-benefits basis, whereas CHAMPUS benefits for all other disabled Medicare beneficiaries under age 65 are provided on the more favorable coordination of benefits basis. This inequity needs to be remedied.

The Military Coalition Recommends restoring CHAMPUS as second payer to Medicare for Medicare-eligible individuals on a "coordination of benefits" basis. (CHAMPUS would be primary payer for individuals residing overseas not covered by Medicare.) Provide a permanent entitlement to CHAMPUS benefits for disabled Medicare-eligible beneficiaries under the age 65 on a coordination of benefits basis;

Efficiency: Managed care networks at base closure sites.—Many retirees at base closure sites are losing access to their primary source of health care—the MTF. These retirees will now be forced to rely on CHAMPUS for their health care, at greater expense to DOD and to the beneficiary. In some cases, these retirees may have difficulty purchasing CHAMPUS supplemental care due to pre-existing medical condition clauses. It would be less expensive for DOD to provide care to these individuals through managed care programs rather than through CHAMPUS and would also be advantageous for the beneficiaries.

The Military Coalition Recommends establishing alternative health care programs for all retirees at bases targeted for closure, before a base is closed, using a managed care network patterned after the New Orleans demonstration model or after the CRI. programs in California and Hawaii.

Efficiency: Inconsistent treatment in USTFs.—Under current contracts, the services provided by Uniformed Services Treatment Facilities (USTFs) range from limited outpatient care to comprehensive inpatient services. Congress has mandated that DOD develop a managed care model to standardize health benefits and contain costs across all USTFs. The new Managed Care Plan (MCP) will combine an enrollment system to facilitate continuity of care and better control care using rigorous utilization management and quality assurance measures.

A related concern is that since their inception, the USTF contractors have been exempt from competition under the Federal Acquisition Regulations. To obtain the most cost-effective services for the government, such USTF contracts should be competitively bid and should incorporate "at risk" provisions.

The Military Coalition Recommends the continued expansion of the MCP to all USTFs, with the requirement that USTFs compete with other DOD managed care programs in the area.

Budget cuts severely curtail services.—It's the Coalition's understanding that cuts in the Army Medical Budget for FY 94 will reduce buying power by approximately $400 million below the FY 93 level. Similar cuts are being considered in other services. There is no way that cuts of this size can be imposed without a severe curtailment of medical services.

These funding reductions follow deep cuts in military medical personnel to meet reduced service end-strength ceilings. While the services face a reduced enemy threat, the demands on the medical corps are not substantially reduced. However, medical personnel fall under the service end strength ceilings and must also be reduced to meet the new troop strength levels. Arbitrary requirements such as this cause bad decisions. The system could be improved by removing medical personnel from service end strength calculations. This would allow better management of the entire MHSS, as is now done for the Medical Budget.

At military treatment facilities throughout the United States, including the Army's flagship hospital, Walter Reed Army Medical Center (WRAMC), thousands of military retirees now are being denied medical care. For example, at WRAMC there are 1,612 beneficiaries on a waiting list extending out 13 months for the Ophthalmology Clinic.

To suggest that the system can absorb further cuts in either personnel or funds without a reduction in benefits is unrealistic.

Readiness considerations.—The Military Health Service System (MHSS) plays an integral part in ensuring the Department of Defense is able to perform its primary mission of protecting the national interest and the national security of the United States. The MHSS mission to ensure that men and women in the Armed Forces are able to receive the highest quality health care available must remain unchallenged. Adjunct to the MHSS mission of providing direct care to the active duty member is ensuring resources remain available to ensure all other DOD beneficiaries continue to have access to quality health care. To do otherwise would have a rapid and adverse impact on the morale and retention programs of the active duty force.

An integral part of the Defense mission is military medical readiness. The military health care professionals are not only responsible for assuring that American service members receive quality care under peacetime conditions, but also under the most severe combat circumstances. They cannot hone their skills to the extent required in combat by treating the relatively young, healthy service members. On the contrary, to maintain a viable, mission-ready, uniformed medical corps, the providers must have access to a wide range of patients both young and old, from pediatricians to geriatrics, who will present them complicated medical challenges comparable to those encountered in the combat environment. A viable graduate medical education is also a viable ingredient in the readiness equation.

The Military Coalition Recommends the MHSS should remain a viable entity ensuring members, retired members of the uniformed services, their dependents and their survivors continue to have access to quality health care under the health care delivery system of the uniformed services regardless of age or the health care status of the beneficiary seeking health care. Further the Coalition recommends that sufficient funds be made available by Congress and that Congress freeze military and civilian medical personnel authorizations at beginning fiscal year '93 levels pending full implementation by DOD and the services of Section 726, Public Law 102–484 and in particular Paragraph (1) of that Section.

CONCLUSION

The Military Coalition again expresses its gratitude to the chairman and the other distinguished members of the subcommittee for reviewing this statement and having its representatives appear before you this date. The Coalition urges you to take the necessary action to maintain the Nation's forces at their current quality and effectiveness and, further, to honor the commitments made to retired servicemembers and their families for long and faithful service to our Nation.

Statement of the Uniformed Services University of the Health Sciences

Mr. Chairman, distinguished Members of the Committee, I am very honored to be here today. I thank you for the opportunity to review the current status and accomplishments of our nation's fully accredited medical school at the Uniformed Services University of the Health Sciences (USUHS).

Two years ago, I had the honor of being sworn in as the third president of the university. Since that time, we conducted a national search for a new dean at the F. Edward Hébert School of Medicine, and appointed Dr. Nancy E. Gary in August 1992.

The reaccreditation process for both the university and the School of Medicine has been in the forefront for much of the past year. Faculty, staff and students have been engaged in institution-wide self-studies in preparation for survey team visits by the Commission on Higher Education of the Middle States Association (MSA) and the Liaison Committee on Medical Education (LCME). I am pleased to announce that the university was informed in April that the LCME has fully reaccredited your federal medical school for the maximum period allowed of seven years. We expect to hear that the university has also been reaccredited by the MSA within the next few weeks.

These reaccreditations attest to the educational quality of the university's academic programs. Our faculty includes many nationally and internationally respected scientists and scholars, and is committed to supporting the university's educational and research missions. Our federal medical school stands ready and fully accredited to serve the nation.

As I report this pleasant news, I want to acknowledge the wisdom of the Congress for the establishment of our relationship with the Assistant Secretary of Defense for Health Affairs. Under Health Affairs' guidance and support, USUHS has enjoyed new stature in the Department of Defense. USUHS has participated to a greater extent in the development of programs and budgets which provide the resources necessary to carry out the mission that has been assigned to USUHS: To provide the nation with medical officers and scientists of character who serve the common good in war and peace. Dr. Martin, the Acting Assistant Secretary of defense for Health Affairs, has provided USUHS with invaluable support throughout the past five months.

Established by the congress on September 21, 1972, as a part of the Uniformed Services Health Professions Revitalization Act, the Uniformed Services University's mission is to educate men and women for careers in public service as medical officers in the Army, Navy, Air Force and the Public Health Service and to conduct other formal educational programs such as graduate education, continuing education and research in the health sciences. The university is dedicated to academic excellence, scientific rigor, humanism and professionalism. Our graduates must be ready for the challenges that confront the nation's health care community and the uniformed services in peace and war. USUHS graduates are prepared for a lifetime of learning and service as members of the uniformed services health care systems.

The USUHS F. Edward Hébert School of Medicine was mandated by congressional legislation to graduate "not less than 100 medical students annually, with the first class graduating not later than September 21, 1982." The first class graduated in May of 1980, and more than 100 medical officers have graduated each year since 1982. On May 15, 1993, the F. Edward Hébert School of Medicine graduated its 14th class, bringing the total to 1,841 physician alumni. In addition to graduating medical doctors, the university offers fully accredited graduate programs in the basic medical sciences. Doctoral degrees are awarded in anatomy and cell biology, biochemistry, medical psychology, microbiology, pathology, pharmacology-physiology, medical zoology and neuroscience. Master's degrees are offered in public health, tropical medicine and hygiene, and in other basic sciences on a limited basis.

USUHS graduates are currently serving in the following uniformed services: Army, Navy, Air Force, and public Health Service. Many now occupy key leadership positions in each of the uniformed services. Approximately 10% of all physicians currently on active duty in the military are USUHS graduates. At this time, the number of graduates who are beyond their period of obligated service is too small to provide meaningful retention data. However, USUHS anticipates a retention rate as high as 90%.

The School of Medicine received 2,417 medical school applications from all fifty states for the fall 1993 entering class. The applicant per space ratio is 15:1, which allows for the selection of highly qualified applicants. Also, over the last two years, the School of Medicine has enjoyed a low average declination rate of 26%. The entering students will have an approximate mean science grade point average of 3.40 and Medical College Admission Test mean score of 9.3 in each of the three subtests, both of which are above the Rational average for students entering U.S. medical schools. USUHS is one of 45 medical schools which requires students to pass Step 1 and step 2 of the United States Medical Licensing Examination in order to graduate.

The university is unique in its mission and ownership. USUHS is our nation's only federal medical school. To meet the mandates of legislation, required medical school accreditation standards, and our vision as the capstone of federal health sciences academia, USUHS must produce the following: continuing medical education for serving medical officers; support for military residency training programs; special military/public health education programs; graduate education in the biomedical sciences; applied and basic research; and medical care for military beneficiaries provided by USUHS clinical faculty in the course of teaching. To fulfill these missions effectively, USUHS must become an academic center for the maintenance and advancement of military and disaster medicine. All of these products are paid for as part of the operating cost of USUHS, and all are part of USUHS' value to the nation. USUHS represents a blending of traditional medicine, military training and character development. Our objective is to produce a doctor who not only practices medicine in the military, but who can practice military medicine.

Let me describe the vital statistics of our current freshman class: 38 members of the class are from minority groups, including 16 from groups classified as underrepresented; 23 percent are women; all have B.S. or B.A. degrees; nine hold Master's degrees and three have been awarded doctorates; 56 percent of the students had prior military experience of some kind; and 52 percent were also accepted at one or more other U.S. medical schools.

According to data supplied by the Association of American Medical Colleges (AAMC), USUHS is in the 95th percentile of all medical schools for number of course contact hours per week. The USUHS medical curriculum is distinct from that of the other 125 U.S. medical schools in several aspects. Prior to reporting to USUHS, each new medical student receives four to six weeks of military orientation at the medical service school of the individual's service. These schools present service specific instruction on subjects such' as administration, customs, leadership, and officer responsibilities. Class cohesiveness develops even before formal school begins.

In addition to the usual medical school curriculum, USUHS has a uniquely integrated curriculum in military medicine which extends across the four years of medical school. First year students take Military Studies I, comprised of an Overview of Military Medicine, Combat Medical Skills, Military Applied Physiology, Leadership, and Field Skills. At the conclusion of the first year's curriculum, just prior to a short authorized summer leave, all students participate in the Military Medical Field Studies course, which includes a two-week field exercise plus a 3–4 week assignment to an operational unit of their parent service. During that assignment, they participate as officers in various aspects of unit training and operations. Another unique USUHS requirement is that all students must be certified in Basic Life Support (BLS) during their first year, and must be recertified each year thereafter.

In the second year, all students take Military Studies II—Introduction to Combat Casualty Care, which includes coverage of the nature of combat operations, conventional and non-conventional weapons effects, operational medical support for the Army, Navy, Air Force and Marines, and case studies in operational medicine. Much of the content of this course is preparation for a later course in preventive medicine which requires students to deal with the medical problems confronting a hypothetical joint task force deployed to Southwest Asia.

During the fourth year, all USUHS students complete a four-week course in Military Contingency Medicine (MCM) that includes the American College of Surgeons-sponsored course in Advanced Trauma Life Support (ATLS), the American Heart Association-sponsored Advanced Cardiac Life Support Course (ACLS), and a variety of military, disaster and emergency medicine topics. This course culminates in a one-week field medicine exercise called Operation Bushmaster. During this exercise, the USUHS student must demonstrate a capacity to practice medicine and to exercise medical officership in a military field situation. The students establish and operate multiple mobile field medical treatment facilities which operate 24 hours a day, and treat simulated patients representing the full spectrum of casualties seen in combat units. Following completion of MCM, students participate in the four-week Military Emergency Medicine (MEM) course, consisting of an on-site experience in any one of a number of busy civilian or military hospital emergency departments and trauma centers.

The Department of Defense encourages all military medical officers to receive ATLS training and complete the combat Casualty Care Course. The USUHS-trained medical officers receive this training as part of the basic curriculum and as a prerequisite to graduation.

USUHS-trained medical officers receive unequalled training in the management of medical situations most likely to occur in the combat or civilian disaster environment. At the same time, the USUHS curriculum sets clinical practice standards for students in all areas of medicine which meet or exceed the requirements set by civilian peer review organizations, accrediting organizations, and regulatory agencies. Clinical rotations in civilian institutions during the fourth year allow students to experience, and to understand, the civilian medical care system. Elective clerkships in the fourth year provide an international perspective on patient care. USUHS is closely affiliated with 16 military teaching hospitals where most clinical teaching of students occurs. These hospitals and medical centers offer programs in major medical specialties, have sizable outpatient workloads and together have more than 5,500 teaching beds.

At the onset of Desert Storm, USUHS graduates filled nine of 14 medical officer positions in the Army Special Operations Forces. USUHS graduates helped to provide backfill and continuity during the initial deployment period. We are proud of the operational readiness evidenced by our medical school graduates. Currently, and for the foreseeable future, U.S. military forces will be increasingly CONUS-based, requiring high levels of readiness for rapid overseas deployment. The USUHS medical school curriculum is specifically designed to train students to meet the attendant medical support requirements.

It is my opinion that USUHS medical graduates are essential to the effective accomplishment of the military medical mission. Graduates of USUHS, by virtue of specialized training and longer commitments, form a cadre of career medical officers who make a significant contribution toward the leadership and continuity so important to our armed forces.

ADMINISTRATIVE ISSUES

The Inspector General, Department of Defense (IG, DOD) completed an inspection of USUHS in April 1990. The inspection report outlined corrective actions that needed to be taken for USUHS to be in compliance with DOD requirements. The Office of the Director, Review and Evaluation at USUHS is responsible for tracking those corrective actions and reporting progress on them to the IG/DOD every six months.

The IG, DOD inspection report outlined specific areas of concern at USUHS. Thirty-six recommendations, of which 27 are closed, ranging from personnel management to international agreements, were made to the management of USUHS in order to improve operations at the university. The most important of these recommendations addressed the need for more oversight of university activities and the development of internal management control procedures at USUHS. The position of the Director, Review and Evaluation has been filled. This office will ensure adequate visibility, credibility, formal recognition of responsibilities, and appropriate review, oversight and internal management control.

EXPANSION OF THE USUHS MISSION

The USUHS administration has worked closely with the Assistant Secretaries of Defense for Program Analysis and Evaluation (ASD/PA&E) and Health Affairs (ASD/HA) on the issue of cost effectiveness. Initial efforts outlined expanded responsibilities for USUHS in the areas of medical consultative services, research, curriculum development, and worldwide continuing medical education. DOD Directive 5105.45, which charters USUHS, was updated, accepted and approved by the Secretary of Defense in April 1991. The USUHS strategic planning and Continuous Quality Improvement (CQI) programs have been underway for over a year. Mission, vision, and guiding principles have been developed, circulated and approved by faculty, staff and students. Strategic goals consistent with those documents and the recently completed accreditation self-studies are now being finalized. These goals are being developed to expand the role of USUHS, increase its cost-effectiveness, and guide us toward our stated vision.

Under Title 10, U.S. Code (Section 2113), USUHS is mandated by Congress to "establish programs in continuing medical education for military members of the health professions to the end that high standards of health care may be maintained within the military medical services." The Accreditation Council for Continuing Medical Education has reaccredited USUHS as a sponsor of continuing medical education (CME). In fiscal year 1992, 273 programs were approved for continuing education credit; the total number of attendees at USUHS-sponsored CME activities was 4,138. The USUHS CME programs facilitate and support the professional development of faculty members and military physicians serving throughout the world.

The university is accredited by the American Nurses' Association Council on Continuing Education in Nursing as an approved provider of nursing continuing education. In fiscal year 1992, 14 programs were approved for continuing education in nursing; a total of 616 attendees were taught at USUHS-sponsored nursing activities.

In response to the Defense Medical Guidance, USUHS is planning an expanded role in graduate medical education. In 1986, the position of the Assistant Dean for Graduate Medical Education (GME) was established to provide consultation on GME programs (internship, residency and fellowship training for physicians) for program directors and OASD(HA). The mission of the office expanded to provide DOD-wide consultation and oversight for 10 USUHS and School of Medicine sponsored and cosponsored GME programs in General Internal Medicine, Pediatric Endocrinology, Pediatric Gastroenterology, Neonatal-Perinatal Medicine, Pediatric Infectious Disease, Clinical Pharmacology, General Preventive Medicine, Occupational Medicine, Radiation Oncology, and Immunodermatology. USUHS stands ready to participate in the development and implementation of the overall office of the Assistant Secretary of Defense for Health Affairs' plan to integrate GME programs and faculty and to have an intra-DOD resident matching system.

USUHS is very much aware of its primary mission of readiness. On May 15, 1993, the USUHS commencement address was delivered by the distinguished Chairman, Defense Subcommittee of the Senate Appropriations Committee, the Honorable Daniel K. Inouye, the United States Senator from Hawaii. Senator Inouye presented an inspiring case for the importance of military and medical readiness when addressing our graduating class. He emphasized the significant contribution of military medicine in operational roles such as disaster relief, humanitarian assistance and peacekeeping operations during his fifty years of distinguished service to the nation.

Within hours of Hurricane Andrew's devastation, military medical personnel were providing assistance. They focused on evacuation and treatment, dental, veterinary and preventive medicine services, logistics, mental health, and communications. Military medicine's response was designed to support and assist community medical resources and personnel until they were able to resume their previous functions. The first large deployment of the National Disaster Medical System (NDMS) Disaster Medical Assistance Teams (DMATs) occurred following Hurricane Andrew. The USUHS Department of Military and Emergency Medicine trained the initial DMATs and USUHS faculty members continue to advise and participate in DMAT operations such as these.

Negotiations with the United States Public Health Service (USPHS) have resulted in an increase of three medical student matriculants per year beginning this fiscal year. The number of USPHS students is expected to increase to 12 within the next two years. To date, USUHS has graduated 71 USPHS medical officers who serve in the Indian Health Service (IHS), National Health Service Corps, the Food and Drug Administration, and the Centers for Disease Control and Prevention. The IHS has also committed two training positions to the graduate programs on an annual basis. In this way, USUHS assists in producing medical officers to serve the health care needs of the underserved within the continental U.S.

On September 22, 1992, the Deputy Secretary of Defense transferred the Armed Forces Radiobiology Research Institute (AFRRI) to the management of USUHS beginning in fiscal year 1994. AFRRI has provided a unique capability for DOD to study the effects of radiation on biologic systems, and is about to become the only organization in the country to possess a reactor dedicated to radiobiology research.

A Transition Team from AFRRI, Defense Nuclear Agency (DNA), and USUHS has been appointed. Working groups are reviewing opportunities to consolidate, or share, administrative and support functions between AFRRI and the university. Emphasis is being placed on cost-effective plans which will maintain quality services for both institutions. A scientific working group is looking for opportunities for university faculty and staff to contribute to the research programs of the institute, and opportunities to utilize AFRRI personnel and resources in support of university research and teaching programs.

ACADEMIC ACTIVITIES

The F. Edward Hébert School of Medicine of USUHS continues to operate fully accredited academic programs in the health sciences. These programs grant degrees in Doctor of Medicine (M.D.), Doctor of Philosophy (Ph.D.), Master of Science (M.S.), Master of Public Health (M.P.H.), and Master of Tropical Medicine and Hygiene (M.T.M. & H.). During fiscal year 1993, the numbers of graduates from these programs were: 155 M.D.; 13 Ph.D.; 20 M.P.H.; and 1 M.T.M. & H.

The USUHS Office of Minority Affairs was established in 1991 with the appointment of Lieutenant Colonel Jeannette South-Paul, M.D., as the Vice President for Minority Affairs. In order to increase the number of traditionally underrepresented minority medical and graduate students at USUHS, the second "Get Acquainted with USUHS Weekend" was held from 1–3 April, 1993. Attendees included 50 prehealth advisors and professors of military science and 50 students from universities with a high enrollment of minority students. Our goals are to increase the awareness in minority communities of what USUHS can offer its students in the biomedical sciences and further understanding of our commitment to quality, diversity, and government service.

The Student National Medical Association (SNMA) meets monthly at USUHS and quarterly in a faculty or student home to discuss common interests and concerns facing minorities in uniformed medicine. The SNMA has several ongoing community projects: monthly meetings at the Birney Elementary School (Southeast, Washington, D.C.) to role model and mentor minority students; and weekly visits to the Shepherd's Table Homeless Soup Kitchen and two other clinics in Montgomery County to shadow volunteer physicians working there.

The Office of Minority Affairs has made considerable progress toward establishing programs that will lead to successful participation in the Association of American

Medical Colleges project to increase total minority enrollment in medical schools to 3000 by the year 2000 (Project 3000 by 2000). The USUHS community is aware of and has utilized the support of the newly established office.

In early 1993, USUHS hosted a successful International Telemedicine/Disaster Medicine Conference in coordination with NASA and the American Institute of Aeronautics and Astronautics. During the conference, a live, two-way video conference with Moscow, Russia, was held via satellite transmission. The conference convened key policy makers and planners from the areas of disaster medicine and telemedicine from the U.S. and other countries. The primary objective of the conference was to review the present and future role of telemedicine in disaster medicine, aerospace medicine in supporting space crew health and research, remote health care delivery, and public health.

A rapidly developing segment within the university's School of Medicine is the Casualty Care Research Center, staffed by military and civilian physicians and scientists in the Department of Military and Emergency Medicine. Created in 1989, the Casualty Care Research Center is a national center for research on all aspects of injury control and combat casualty care. The goal of the Casualty Care Research Center is to establish a national center of excellence for research on issues relating to injury control and casualty care, including acute care, epidemiology, biomechanics, prevention and rehabilitation. The Center provides research and resource information, technical assistance and community service to USUHS and other federal, state, and local agencies which share common interests in casualty care and operational medicine.

The faculty of the Casualty Care Research Center, USUHS and the Department of Interior, United States Park Police (USPP) developed the Counter-Narcotics Tactical Operations Medical Support (CONTOMS) program to train personnel to medically support tactical law enforcement operations related to the counter narcotics effort. The relationship between USUHS and the USPP has demonstrated that medical input in mission planning is beneficial and that medical support for tactical operations requires a unique expertise. Through this relationship, the university has accessed unique training and development opportunities for students, physicians, and faculty, while federal, state and local police have been able to take advantage of a unique national resource which has directly enhanced their mission effectiveness. The CONTOMS program has trained more than 900 personnel from the Drug Enforcement Administration, the Federal Bureau of Investigation, the United States Marshals service, the United States Secret Service, the National Park Service (Department of Interior), the Federal Law Enforcement Training Center (Department of Treasury), and police and sheriffs' departments from over 34 states.

Current research efforts of the Casualty Care Research Center include: development of a casualty data base for medical system modeling and planning; assessment of doctrine and equipment for naval special warfare medical support; development of training programs for triage instruction; assessment of penetrating injury severity; medical response to terrorism, management of combined trauma and hypothermia; application of military casualty care methodologies to support federal law enforcement operation; and emergency medical care in austere environments.

The Military Stress Studies Center serves as a focal point for special studies and seminars on stress, combat, stress reactions, long-term consequences of hostage situations, and prisoners of war. Created in 1985, the Stress Center's mission is to establish a center of excellence for research on issues related to stress, psychiatric illness, and treatment. Currently areas of research and consultation by center staff include disaster medicine, trauma, chronic stress, and other issues of particular relevance to the military that will be added as they arise.

STATUS OF THE PROGRAM FOR TRAINING PSYCHOLOGISTS TO PRESCRIBE DRUGS

This congressionally mandated demonstration project is intended to train clinical psychologists to prescribe certain psychotropic drugs. The Army Surgeon General was charged as executive agent to develop a demonstration project that would prepare uniformed clinical psychologists to prescribe a limited formulary of drugs within the military health care system. In 1991, four military clinical psychologists (two from the Army and two from the Navy) were assigned to participate in this demonstration project. The first phase of this project evaluated the feasibility of using unmodified courses from the medical student curriculum of the F. Edward Hébert School of Medicine to be accompanied by a clinical practicum at Walter Reed Army Medical Center (WRAMC). To further develop this program, WRAMC has primary responsibility to develop the curriculum and manage the two-year training program to achieve this aim. USUHS is assigned to support WRAMC in this task by developing and instituting the first year didactic portion of this program with a newly designed curriculum. The Surgeon General of the Army has been tasked to appoint an advisory committee to oversee the entire demonstration program. The American College of Neuropsychopharmacology (ACNP) serves as external evaluator of this program.

Three of the original clinical psychologists continue in the training project. The participants completed their didactic requirements in May 1993, and began their nine-month clinical practicum full time. A new one-year didactic curriculum at USUHS required to support this program has been developed. Where possible, these courses will be used to support the development of other USUHS programs. The curriculum plans have been approved by the Evaluation Committee from the ACNP.

STEPS TAKEN TO INSTITUTE THE CLINICAL PSYCHOLOGY PROGRAM

The Assistant Secretary of Defense for Health Affairs (ASD/HA) tasked USUHS on December 9, 1992, to establish a Ph.D. program in Clinical Psychology for the 1993–94 academic year. The students are to be drawn from qualified applicants in the uniformed services and in the private sector.

One Army captain is currently attending USUHS on an outside training billet from the Army Medical Service Corps. The Medical Psychology billeted faculty is providing the basic science component of the program. The one clinical course and practicum in the first year is being taught by the Army Clinical Psychologist who is an adjunct member of the faculty. The practicum is being carried out at the Psychology Service of the Walter Reed Army Medical Center.

The recruitment of a senior, full-time faculty member to serve as Director of Clinical Training has been initiated and all aspects of the program have been coordinated with the Service Specialty Advisors. Contact has been made with the Indian Health Service to elicit their participation. Two students, one Navy and one Air Force, are expected to matriculate this August.

STEPS TAKEN TO INSTITUTE A NURSE PRACTITIONER PROGRAM

In the FY 1993 budget, the Congress provided $1M to begin the planning and implementation of a Nurse Practitioner Program at USUHS. The key feature of this program is the education of nurses who will practice in advanced nursing roles in the uniformed services. Nurse Practitioners prepared in this program will provide the uniformed services with additional professional nurse leaders who have demonstrated skills in reasoning, analysis, research, and decision-making relevant to health care delivery in the uniformed services.

A mission statement is in refinement stages; a curriculum has been proposed for a Master of Science in Nursing program; and monthly reports will be sent to the Surgeons General and uniformed nursing chiefs. The program's development is progressing. State agencies and certifying bodies have been contacted as a part of the accreditation process.

RESEARCH ADMINISTRATION AND SUPPORT

Currently in FY 1993, USUHS has 318 active research grants. While these grants cover a wide area of biomedical research interests, the faculty members at USUHS are conducting 59 research projects supported by other DOD agencies. USUHS is at the forefront of basic biomedical and applied health services research. This research covers such areas as infectious diseases, combat casualty care, wound healing, factors which affect military performance, and responses to the stresses of military life. In addition, USUHS investigators maintain an approved funding rate of 34% from the National Institutes of Health, versus a national average of 29 percent.

The current status of USUHS' patent activity continues to be very encouraging, as evidenced by the diverse nature of the technology and its commercial potential. Our patent portfolio consists of 37 invention disclosures, 8 pending patent applications and 8 patents issued to date. Nearly 100% of our patent portfolio is being licensed.

SUMMARY

This past year has been an exciting time of growth and change within the university. I am committed to continuing the high standards upon which USUHS was founded. Despite the fact that federal funds allocated to the Department of Defense are diminishing, we will continue to focus on the most efficient, effective, and creative utilization of those resources available to us.

The Uniformed Services University of the Health Sciences houses talented and dedicated faculty and staff that, on a day to day basis, ensure and exemplify educational excellence. The graduates of this university will continue to be of the highest caliber. I am dedicated to the university and believe that with the continued support of the Congress and the commitment of the university staff and faculty, this federal institution will continue to serve our great nation.

CONCLUSION OF HEARINGS

Senator INOUYE. That concludes our hearings. The subcommittee will recess, to reconvene subject to the call of the Chair.

[Whereupon, at 12:06 p.m., Tuesday, September 14, the hearings were concluded and the subcommittee was recessed, to reconvene subject to the call of the Chair.]

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